Engineering
Library
JUL 31 1916
UNIV. OF MICH.
LIBRARY

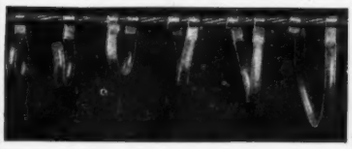
Telephony.

THE AMERICAN TELEPHONE JOURNAL

PUBLISHED EVERY SATURDAY.
TELEPHONY PUBLISHING COMPANY.
VOLUME 71, NO. 5.

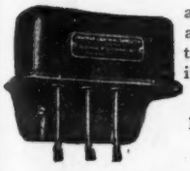
CHICAGO, JULY 29, 1916.

SINGLE COPIES, 10 CENTS
YEARLY, U. S. A., $3; CANADA, $4;
ALL OTHER COUNTRIES, $5

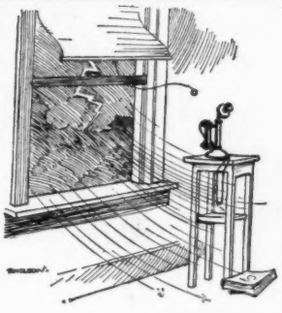


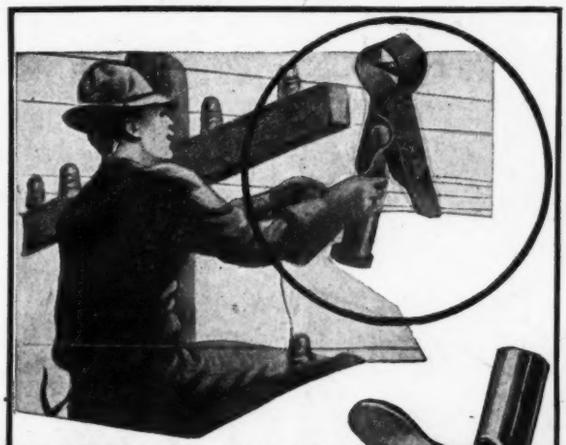
CAMERON
Aerial Cable Rings
(Patented)
6 SIZES—7 STYLES
A "special" ring for every cable and condition
Ring ... struction Booklet on Request
Cam... ron Appliance Co.
48 W... rs Ave. Everett, Mass.

EVERSTICK ANCHORS
You will go around in a circle, if you are looking for a better anchor than the EVERSTICK—there's a reason.
Write for Literature.
Everstick Anchor Co.
St. Louis, Mo.

Automatic Lightning Protection
Chapman Arresters

are self cleaning and require no attention after erecting.
Used whereever lines are run.
Manufactured by
MINNESOTA ELECTRIC CO.
MINNEAPOLIS, MINN.

Telephone Cables
ALL SIZES AND CAPACITIES
Hard Drawn Copper Telephone Wire.
Galvanized Iron Telephone Wire.
Siemens-Martin and High Strength Strands.
AMERICAN ELECTRICAL WORKS
PHILLIPSDALE, R. I.
CHICAGO—112 W. Adams St.
CINCINNATI—Traction Bldg.
NEW YORK—165 Broadway

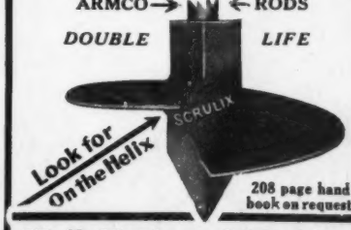

More Work for the Trouble Man
Unless It's a
"RAVEN BRAND"
Moisture Proof Cord
Supply Sales Department
Automatic Electric Co.
Chicago, Ill., U. S. A.
Makers of 600,000 Automatic Telephones
We Have Branches in
New York, N. Y.—46 W. Broadway
Toledo, O.—Second Nat. Bk. Bldg.
Buffalo, N. Y.—332 Ellicott St.
Boston, Mass.—Tremont Bldg.
Detroit, Mich.—Ford Bldg.
Pittsburgh, Pa.—Firt Nat. Bk. Bldg.
Philadelphia, Pa.—Bourse Bldg.
St. Louis, Mo.—Syndicate Trust Bldg.


HOOK UP! In 10 Seconds With a
Frankel Testing Clip
MAKERS OF THE BEST ONLY
FRANKEL
CONNECTOR CO., INC. N.Y.
733 Broadway, NEW YORK CITY
or Western Electric Company, All Branches

American Steel & Wire Co.'s
W. & M.
TELEPHONE WIRE
AMERICAN STEEL & WIRE CO.
Chicago New York Cleveland
Worcester Pittsburgh Denver

CEDAR POLES
Wire or write for delivered prices
NATIONAL POLE CO.
ESCANABA :: :: MICH.

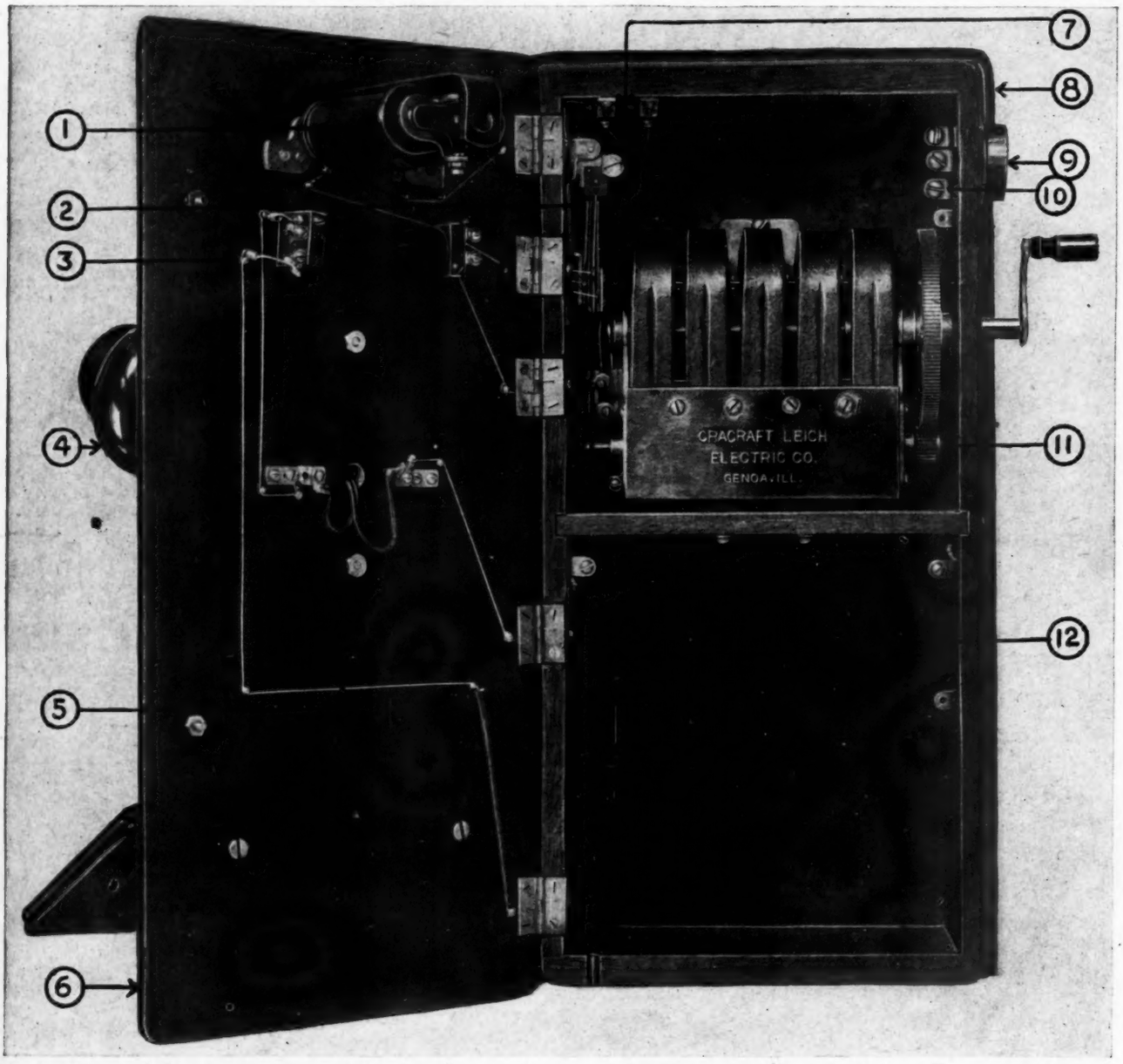
Edward E. Clement
ATTORNEY AT LAW
Practice includes representation before the Interstate Commerce Commission
Solicitor of Patents
Office: McLachlen Building, Washington, D. C.

MATTHEWS SCRULIX ANCHORS
Can be used under more varied conditions than any other.
ARMCO → ← RODS
DOUBLE *LIFE*


208 page hand book on request
W. N. Matthews & Bro., Inc.
St. Louis, Mo.

TWELVE REASONS WHY YOU SHOULD USE THIS TELEPHONE

The latest evolution of the Compact Type Magneto Telephone is here shown. This new design has been brought out to give you the **smallest,** most **accessible, convenient, reliable** and **durable** Magneto Telephone. Make this instrument your standard. **Let us send you one for trial or examination.**



1. No. 1-A RINGER, polarized and self contained with eccentric gong adjustment. Armature will not stick and can be given any desired adjustment by turning a single screw.

2. HOOKSWITCH has springs mounted vertically, will not catch dust and made of the best of materials. Special spring provided to actuate hook which is not dependent on the contact springs for its operation. Hook easily removable.

3. No. 1-A INDUCTION COIL, mounted on door where you can get at it. Quickly removable. Has combined solder and screw terminals.

4. No. 1-L TRANSMITTER, high resistance, low battery consumption. Back cup drilled to interchange with any other arm. TRANSMITTER ARM, short type, makes it possible to mount telephone in small space.

5. No. 3-A CONDENSER can be connected here. The addition of a condenser in the receiver circuit of telephones on a party line makes it possible to ring out on the line regardless of the number of receivers off the hooks.

6. DOOR opens to the left—a convenience to the installer in that generator can be operated with door open and all tests properly made.

7. RECEIVER CORD TERMINALS are placed where they can be gotten at and do not interfere with other parts. Either pin or spade tips can be used with these terminals.

8. CABINET of finest kiln-dried first grade oak, tongued and grooved. Hand-rubbed dull varnish finish throughout. Selected from many finishes as being the most suitable and durable for the wear given a telephone.

9. LIGHTNING ARRESTER which really protects—has specially large surface. Mounted on side of cabinet where opportunity of shorting line is small.

10. LINE TERMINALS, good size—mounted inside—no chance for putting telephone out of commission by using top of telephone as a shelf.

11. No. 5-A GENERATOR, compact, powerful, high voltage—will ring your bells under most severe conditions. Well supported in the cabinet and quickly removable.

12. CABINET WIRES are NOT soldered to hinges but connected to the phosphor bronze spring of the hinge in such a manner that we are able to guarantee indefinitely these hinge connections. Very little wiring concealed—no loops or loose wire used. This neat method of running circuit wires from door to interior of cabinet is patented by us, and therefore only found on our telephones.

DISTRIBUTORS { ELECTRIC APPLIANCE COMPANY CHICAGO DALLAS NEW ORLEANS SAN FRANCISCO
ST. PAUL ELECTRIC COMPANY, 316 ROBERT STREET, ST. PAUL, MINN.

CRACRAFT, LEICH ELECTRIC COMPANY

Factory and Main Office, GENOA, ILL. **Western Branch, KANSAS CITY, MO.**

Telephony.

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves

PUBLISHED WEEKLY BY THE TELEPHONY PUBLISHING COMPANY
MONADNOCK BLOCK, CHICAGO

H. B. McMEAL, PRESIDENT AND EDITOR. H. D. FARGO, SECRETARY AND TREASURER. J. C. KELSEY, VICE-PRESIDENT AND FINANCIAL EDITOR.
S. R. EDWARDS, MANAGING EDITOR. J. R. HASTIE, VICE-PRESIDENT AND ADVERTISING MANAGER. W. E. RAYMOND, SUBSCRIPTION MANAGER.

Entered as second-class matter September 4, 1908, at the post office at Chicago, Ill., under act of March 3, 1897

Volume 71
Number 5

CHICAGO, SATURDAY, JULY 29, 1916

Subscription—10 Cents a Copy
$3 a Year U. S., Cuba and Mexico
$4 Canada; $5 Other Countries

Bill the Troubleman says: "Large bodies move slowly. Uncle Sam has just bought the Danish West Indies after 51 years of negotiations. How long will it take the Bell telephone combine to wake up to the folly of its Western Electric factory relations?"

How It Affects Bell Licensees.

"Lord, how the world is giving to lying!" exclaimed a certain gentleman who had grown weary of deceit and insincerity. This is the attitude of many Bell licensee companies which have become tired of waiting for the Western Electric Co. to furnish them with needed equipment because the latter continues its unfair and wasteful efforts to get Independent business.

There is a well-defined impression that the reason the Western Electric announced it would solicit no more Independent trade was largely to pacify the Bell associated companies which had become angrily impatient because their orders were being held up. There had been so much delay in the Bell factory in filling Bell orders that in any ordinary business deal the buying customer would have refused to stand for non-deliveries and long ago would have transferred his purchases to another manufacturer able to give prompt service. Of course, the Bell operating companies could not exercise this privilege. They are compelled to patronize the American T. & T. factory whether they want to or not—and many of them have long been heartily sick of the alliance for that and other reasons. The howl for equipment and materials rose louder and louder, however, and the Western Electric's alleged withdrawal from the Independent field, so it could devote all of its energies to meeting Bell demands, had the effect of making the Bell licensees hope that they would receive better attention.

Developments, however, do not justify this hope. The Bell operating units are still clamoring for equipment which the Bell factory is shamefully slow in delivering, while they hear on every hand that the Western Electric is still searching the highways and byways trying to get Independent telephone orders at a loss. The result is that the operating end of the Bell organization believes the Western Electric simply tried to pull the wool over their eyes, and quiet the bitter complaints, but at the same time continue to poach on the Independent field, thereby perpetuating an unfair commercial condition which calls for stringent action by federal authorities.

From Austin, Texas, comes the report that on July 7, a Western Electric salesman was hot after an Independent telephone job and was so eager to get the business that he even offered the prospective buyer the benefit of lower prices which were supposed to cease June 30. The report also states that another Bell emissary appeared to assist the first-comer, making two on the job. Probably the second solicitor was a nearby Bell operating man with orders to fly to the rescue of the factory representative. Thus do the employes of a public service corporation—only one, however, the American T. & T. Co.—persist in the unfair competition of figuring in a merchandizing and manufacturing deal.

Kansas salesmen for the Western Electric Co. say they have received no orders from headquarters to cease soliciting Independent business. At Superior, Neb., the Nuckolls County Telephone Co. was in the market for a switchboard July 7, and was visited by two Western Electric salesmen. One of them said the order withdrawing from the Independent field was "bunk," and only intended to minimize the work of seeking small and unimportant jobs. He might have added, also, to lead the Bell operating companies to believe that they were receiving the undivided attention of their factory.

From Iowa comes word that a Western Electric salesman was at West Bend and Emmetsburg July 17, and at Ruthven July 18. They said they had received no orders to stop soliciting Independent telephone business.

A more complete report of what occurred at Richland Center, Wis., shows that two Bell factory men were on the job and, in order to secure the business, agreed to furnish a switchboard covered by American T. & T. specifications. From Sheldon, Iowa, the news comes that a Bell factory salesman was on the ground looking for Independent trade. He said the only change in conditions was that the Western Electric was not going after new Independent business. At Lorain, Ohio, two Western Electric salesmen—they seem to work in pairs—showed up July 5 with a complete set of specifications, circuits and floor plan for the new common battery proposition now on at that place. From South Haven, Mich., comes a re-

port that a Bell factory salesman was recently there and told the Independent manager he was there to sell him anything he desired.

On July 1 two Western Electric men were at Sandusky, Ohio, as well as at Port Clinton, figuring on local telephone jobs. From Jacksonville, Fla., comes the same information about the Bell factory having salesmen at work seeking outside business. Similar reports are received from Disco, Ind.

An Independent telephone manufacturer informs TELEPHONY of a particularly flagrant case at Upton, Wyo. A new Independent telephone company was formed in the district, and this manufacturer obtained the order for the wire and much of the construction material. His firm also would have received the order for telephones, but the Bell manager of the operating company flew to the rescue of the Western Electric salesman and used his influence—as a Bell operator with whom the new company might want to connect—to throw the business to the Bell factory.

And so it goes.

These are the reasons, Mr. Bell Licensee, why you find it so hard to obtain equipment from your factory. The Western Electric-Bell combination is so busy prosecuting its unfair competitive methods against the Independent telephone interests that it cannot supply your wants with any degree of promptness. *Besides, the Bell factory knows that it has your licensee trade "cinched" and need not worry about losing it because of slow deliveries and careless attention.* The Bell licensee business is the bird in the hand of the Western Electric Co., but that does not prevent that concern from scouring the bushes for other trade.

The wonder of it all is that the Bell should persist blindly in following this miserable policy. The legal authorities cannot permit this unfair competition to go on, for it is contrary to all ideas of fair play. Of course, the history of the telephone industry shows that the Bell organization never learns anything until it gets a swinging blow on the head. It will not do the fair thing until it is compelled. The moral, then, is that Independent telephone interests must keep up the fight. The Independent operators should not buy a dollar's worth of material from the Bell factory. The Independent manufacturers should continue gathering ammunition for the battle before federal and state commissions to force the Bell to stick to fair competition. It is a fight against special privilege that will triumph in the end.

They Didn't Tell at Commencement

By HERBERT KAUFMAN

The distinguished highbrows whose commencement grandiloquence has just assured you of your superiority to the common run of mortals, are prone to overestimate the impressiveness of a degree. That's because they know almost everything except practical conditions. A diploma simply tells us that your theoretical instruction is ended and your real education still to start. You aren't aware of a single thing that we haven't already learned. Colleges are canning plants where heads are filled with information secured and preserved by experience.

All things being equal, you'll have preference for and in any situation which requires trained intelligence, but you must start in the ranks—work your way up to officership by demonstration of judgment and initiative. We expect you to bungle for quite a while. While you have been digging in the graveyard — resurrecting the bones of yesterday—we have been dealing with circumstances which were not anticipated by your professors.

We can buy all the text books you've plugged through for about $69.30, and your personal version of them is worth just about that much. But if you have any new ideas, if you can simplify a single intricacy of the plant or office, if you can employ your fund of rhetoric to advance one original selling argument, if you can introduce some clinching phrases in the sales manager's follow-up letters—we can use you.

We won't accept you at your own untried, inexperienced, brash and exalted estimate. Your notion of competence is based upon probabilities—we can find plenty of men with a record to their credit.

The factory tests all material to make sure that it will stand the strain of service. We don't take quality for granted. The mills are constantly delivering products identical in process but widely varying in stability—so are the universities and high schools.

You must show us before we give you a a show. We won't buy you until we try you. You're an academic graduate but a freshman in our school. We shall probably be forced to pound your bump of conceit into a livid lump—tear your false pride to tatters—but if you can be discouraged and deterred by a little corrective man-handling, you aren't made of stern enough stuff to survive in our company.

Now, pitch your letters of introduction out of the window, and turn to the want pages. Go out tomorrow and get your own job. Confidence doesn't ask for odds. True ambition will not use a jimmy to "get in." The youngster who exerts influence simply arouses prejudice. Employers and employes both resent the exercise of pull. When you don't begin by standing on your own feet, folks are apt to believe you can't.

Copyright, 1916, by Herbert Kaufman.

Re-Using Short Lengths of Released Jumper Wires

A Convenient Method of Determining the Length of Jumper Wire Between Any Two Points on Opposite Sides of a Distributing Frame—Several Methods for Measuring the Lengths of Released Jumper Wires

By J. W. Powell

Due to changes in the assignment of answering jacks and disconnection of service there is always, in every large central office, an assortment of released jumper wires of various lengths, the re-use of which, with a minimum amount of waste, is of considerable importance to the telephone company. This is especially true at this time when a shortage of materials and increased prices are being experienced.

In order to solve the problem some method of quickly measuring the length of a jumper wire removed from a frame is necessary and also a means of estimating the length of jumper wire required between any two points on opposite sides of a distributing frame.

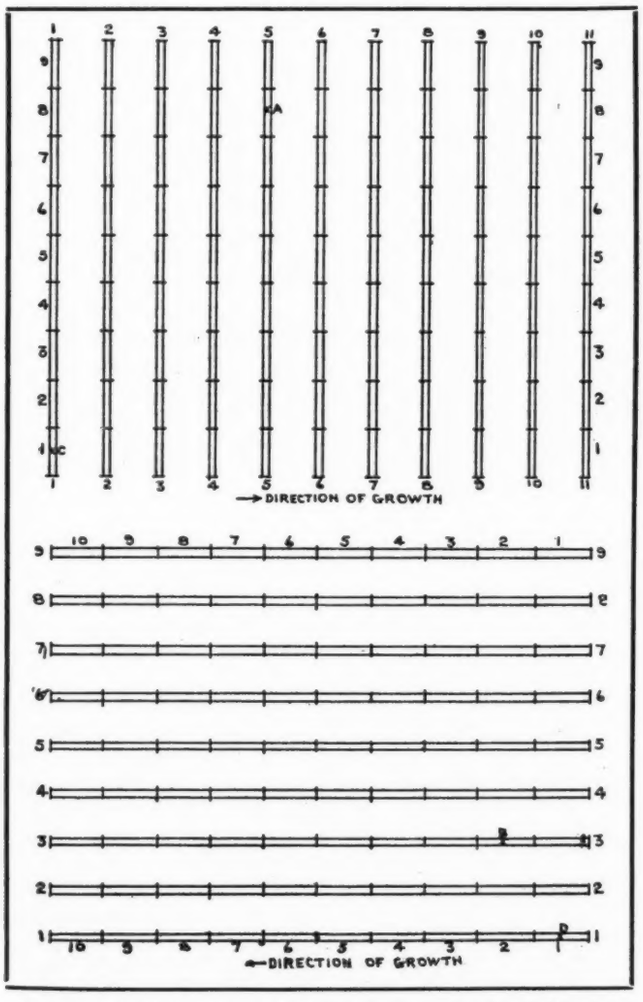


Fig. 1. Typical Intermediate Distributing Frame Equipment.

A convenient method of determining the length of jumper wire required is illustrated in Figs. 1, 2 and 3. Fig. 1 is a typical equipment drawing of an intermediate distributing frame; Fig. 2 a plan view; Fig. 3 a cross section, while the table gives the desired lengths.

Referring first to the plan view, Fig. 2, it will be noticed that, commencing at the left end of the frame (facing the vertical side) the maximum dimensions from the center of the distributing ring to each of the terminal strips in the horizontal row have been computed. It is also apparent that each length shown will be a constant for every case in which the number of verticals crossed is the same. The distance from the distributing ring, for example, on vertical 3 to block 5 on the horizontal side, will be the same as the distance from vertical 1 to block 3, or 2 feet 8 inches.

VERTICAL DISTANCE-MEASURED IN NUMBER OF HORIZONTALS CROSSED BY JUMPER WIRE	HORIZONTAL DISTANCE-MEASURED IN NUMBER OF VERTICALS CROSSED BY JUMPER WIRE									
	0	1	2	3	4	5	6	7	8	9
0	4'-8"	4'-10"	5'-1"	5'-3"	5'-10"	6'-3"	6'-8	7'-2"	7'-8"	8'-2"
1	4'-11"	5'-1"	5'-4"	5'-8"	6'-1"	6'-6"	6'-11"	7'-5"	7'-11"	8'-5"
2	5'-5"	5'-7"	5'-10"	6'-2"	6'-7"	7'-0"	7'-5"	7'-11"	8'-5"	8'-11"
3	5'-11"	6'-1"	6'-4"	6'-8"	7'-1"	7'-6"	7'-11"	8'-5"	8'-11"	9'-5"
4	6'-6"	6'-8	6'-11"	7'-3"	7'-8"	8'-1"	8'-6"	9'-0"	9'-6"	10'-0"
5	7'-1"	7'-3"	7'-6"	7'-10"	8'-3"	8'-8"	9'-1"	9'-7"	10'-1"	10'-7"
6	7'-9"	7'-11"	8'-2"	8'-6"	8'-11"	9'-4"	9'-9"	10'-3"	10'-9"	11'-3"
7	8'-4"	8'-6"	8'-9"	9'-1"	9'-6"	9'-11"	10'-4"	10'-10"	11'-4"	11'-10"
8	9'-0"	9'-2"	9'-5"	9'-9"	10'-2"	10'-7"	11'-0"	11'-6"	12'-0"	12'-6"

Table of Dimensions for Jumper Wire.

On the cross section view, Fig. 3, the maximum distances from each of the terminal strips to the center of the lowest distributing ring have been found and a similar general rule is true. The length of a jumper wire, for instance, from terminal block 9 to the distributing ring on horizontal 4, will be the same as the distance from block 6 to the ring on horizontal 1 or 3 feet 7 inches.

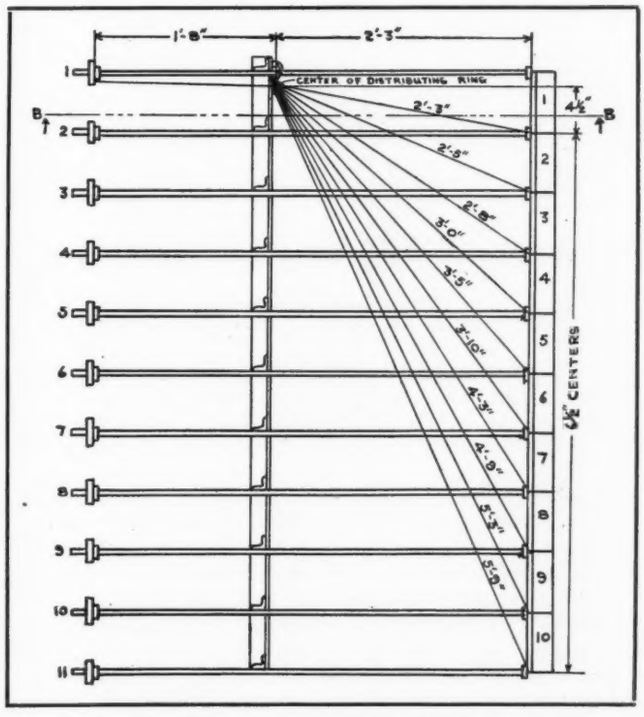


Fig. 2. Plan View of Intermediate Distributing Frame.

The length of any jumper wire may now be determined by combining the proper vertical drop with the horizontal run and

adding an allowance for soldering and slack. For this illustration, an allowance of eight inches has been used.

The table shown has one vertical column for each vertical of the frame and one horizontal column for each horizontal row of terminal strips and the figures given represent all the possible combinations of lengths for the frame shown. The lengths, for example, in the first horizontal column are determined by combining with 1 foot 9 inches, the various lengths shown on the plan view, Fig. 2, and adding eight inches. The second row is worked out by substituting the 2-foot dimension found on Fig. 1 for 1 foot 9 inches.

In order to apply the scheme to a distributing frame, it is necessary to number the horizontal and vertical rows of terminal strips on each side of the frame in the manner shown in Fig. 1. On this view two illustrations have also been indicated. To determine the length of jumper wire required

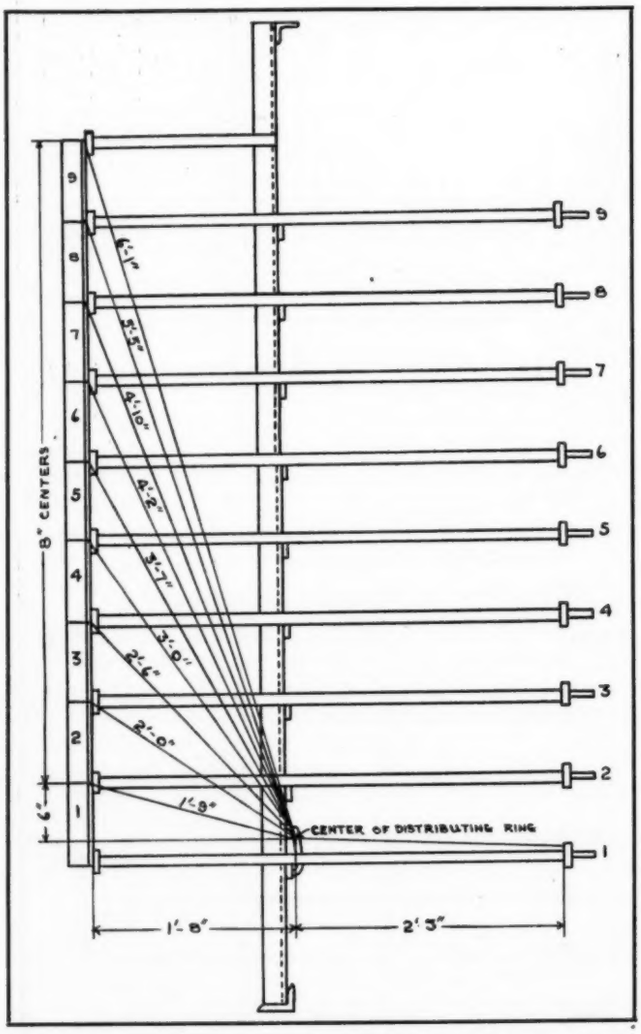


Fig. 3. Cross Section of Intermediate Frame, Section B-B.

between points *A* and *B*, it will first be noted that the point *A* lies in the eighth horizontal row and *B* in the third. The difference, or the number of horizontal rows the jumper wire will drop is five. *A* also lies in the fifth vertical row and *B* in the second. The difference, three, represents the number of vertical rows the jumper will cross, running horizontally. Turning now to the table, the required length is readily found at the point where the fifth horizontal row is combined with the third vertical column or 7 feet 10 inches. Similarly the length of jumper required between points, *C* and *D*, is 4 feet 8 inches, the difference in each case being zero.

Such a table can readily be worked out in convenient size for any main or intermediate distributing frame and used in connection with the regular equipment drawings. In the case of frames having protectors on the vertical side, it is necessary to rule horizontal lines corresponding to the rows of terminals on the opposite side.

For measuring the lengths of released jumper wires, there are, of course, many methods. One device which will be found convenient in many cases, consists of three pegs of suitable length mounted in the form of a triangle on a board, the pegs being one foot apart. The wire is coiled on these pegs and the length determined by counting the number of turns. Another method consists of a postal or similar scale, the dial of which is graduated in feet instead of pounds.

Meeting of Traffic Committee of U. S. Association.

The traffic committee of the United States Independent Telephone Co. held a meeting at Columbus, Ohio, on Monday and Tuesday, July 10 and 11. When the meeting was called to order, the sub-committee, appointed at a meeting held in May to compare the set of operating rules drafted by the service committee of the association with the practices and rules of the Bell and larger Independent companies, was called upon to make a report of the progress made. This sub-committee, which is composed of F. V. Newman, T. J. Tune, and W. S. Vivian, had met in Columbus on Saturday, July 8, where the day was spent in further consideration of the operating rules.

Following this report a good share of the time was taken up in examining and discussing the proposed provisions. Q. E. Elwell submitted a report on ticket operating; H. E. Davis, a report on routing instructions, and Chairman Newman, a series of questions. All of these reports were received by the committee and will later be placed in their proper places in the proposed book of operating instructions.

On Tuesday, the visitors had an opportunity of witnessing the methods used by the Ohio State Telephone Co. in its school, which is conducted by Miss Mae Marion. Following the school, Chairman Newman gave a demonstration with his lantern, throwing quite a number of slides on the screen.

The entire company then adjourned to the offices of Messrs. Tune and Elwell, where an examination was made of numerous reports, maps, etc., that the Ohio State Telephone Co. is using and preparing in its traffic department.

On Monday evening the visitors were the guests of the Ohio State Telephone Co. at a dinner.

Before the meeting adjourned, the committee received an invitation from H. E. Davis to hold its next meeting in Kansas City. The invitation was accepted by the committee and the next meeting will be held in Kansas City, in all probability the early part of December. It is hoped that the new book of operating instructions will be ready for distribution early in the fall.

There were present: F. V. Newman, secretary-treasurer, Michigan Independent Telephone & Traffic Association, Grand Rapids; H. E. Davis, general traffic superintendent, Kansas City Home Telephone Co.; T. J. Tune, traffic engineer, Ohio State Telephone Co.; Q. E. Elwell, traffic superintendent, Ohio State company; W. I. Howard, superintendent of long distance, Tri-State T. & T. Co., St. Paul, Minn.; C. E. Doolittle, traffic superintendent, Citizens Independent Telephone Co., Terre Haute, Ind.; W. H. Hay, service engineer, Western Penna. association, Pittsburgh; J. A. Harrison, traffic engineer, the Lima (Ohio) T. & T. Co.; V. Eversole, traffic chief, Lima company; C. E. Smith, traffic manager, Citizens Telephone Co., Grand Rapids, Mich.; Martin Umbach, traffic manager, Home T. & T. Co. of Fort Wayne, Ind.; G. R. Johnston, vice-president, Ohio State company; W. S. Vivian, secretary-treasurer, United States association, Chicago.

More Hot Weather Fancies

How Lucky the Other Man Is—Having a Cinch

By J. C. Kelsey

It is natural to believe that the other fellow has all the luck. The man who has spent thirty years of his life in a bank believes he would have been successful if he had gone into manufacturing.

The manufacturer, who occasionally has to borrow money at the bank and often wonders how in the world he will ever pay it back, wishes he had started a bank instead of that modest little factory of three decades ago. Likewise, the telephone man looks about and thinks that if he had put the same amount of energy into something else, he, too, might be happier.

Each man thinks the lot of the other fellow is superior because he only judges by externals. The other fellow always has the best of it. At least, that is the universal belief.

I had a good example of that in a restaurant where men stand in line, with money in hand, to pay in full for what has gone before and while the pleasure of the meal is at its maximum.

As I stood in line awaiting my turn to pay, I thought the restaurant keeper was a lucky man, because he had a cinch business, inasmuch as he collected every cent due him. But I had the wrong idea because the restauranteur was seething with righteous wrath—he had just received notice to pay his telephone bill or suffer the pangs of a shut-off. And I heard him say, spitefully, too: "I wish I had the cinch that a telephone company has!"

The telephone man wishes he had a cinch. The public believes he has one, and will not believe for a moment otherwise. To the public, life with the telephone business is one glad song from morning till night.

To other utilities, life without coal bills, meters, electrolysis, and leakage must be surely sweet. Yet the telephone man does not appreciate the cinch he has—he is looking over the fence at the other fellow's crop. Surely the other fellow is the lucky guy.

Last week I received notice that an insurance premium was due. Long years ago, the insurance company told me it probably would cost $132.04 a year to insure me, but if for any reason it did not take that much, it would return something.

This year it decided that it had charged $9 too much for each thousand and obligingly returned it, with the inferred question: "Were they not wonderful business men to do so?"

What a cinch it would be if the manufacturer could charge $15 for a telephone, and at the end of the year, after all expenses, reserves and reasonable dividends were paid, should return $5 or $4.85?

What a cinch it would be if the telephone company with business rates of $36 per year, could charge $54 in advance, and, after paying all expenses, reserves, and dividends, return $18 or $17.54 to the subscriber?

What a cinch it would be even if people paid promptly as they did in the restaurant. Oh! The other fellow is the lucky guy.

Speaking of cinches in the telephone business, there is one which even puts the insurance company in the background. That cinch is the contract between the Bell licensee company and the Bell factory. It really is an amusing condition since the parent company owns 100 per cent. of the stock of both companies.

In other words, a man makes a contract with himself, and agrees with himself as to what he shall eat and drink and where he shall sleep.

"The telephone company hereby employs the Western Electric Co. as its agent, to procure for it all the articles which it may require for its own use, and hereby agrees to procure *all* such articles through the electric company."

But such a contract is a monopoly affair, for the word "all" certainly leaves no doubt as to its meaning. So to comply with law or public opinion, the following provision is skillfully tacked on:

"Provided, however, that nothing herein contained shall be construed as requiring the telephone company to purchase or use any article manufactured or sold by the electric company unless it shall desire to do so."

Bless your soul! The contract to procure all the articles is not a monopoly contract at all. There is nothing in the wording of it which indicates that the telephone company must do it unless it wants to. All the contract means is that the telephone company *will* procure all, and not necessarily *must* procure all.

If monopoly laws are satisfied by this sweet and delicate evasion, we surely have a laugh coming.

"The electric company shall not be required to deliver any apparatus, supplies, or material, or to buy any unusual quantities of supplies or material, or to have manufactured any special apparatus except on the telephone company's requisition; and the telephone company agrees to take within one one year, all the apparatus, supplies, or material so bought or manufactured, or failing to do so, to reimburse the electric company for all active loss sustained by it on account of such failure."

Suppose every Independent telephone company were compelled to order every item of apparatus, supplies, and material one year in advance. Would not the telephone manufacturer feel that life was worth living?

The telephone manufacturer has grown up with the idea of hustling for what he gets. He starts the year with hopes alone, for he has no promises of a gigantic business already scheduled. He has a sales force, a factory plant and all readiness to serve, and has no one to fall back on to reimburse him if the contracts are not fulfilled.

The Independent telephone manufacturer not only is denied the opportunity of being reimbursed but has no contracts hurled at him—he still has to solicit them.

Yet with a $60,000,000 cinch, the Bell factory was not happy. It was not content with a big bird in the hand, but wanted to go out into the bushes for the small ones. It thought the Independent telephone manufacturer was the lucky guy, and never rested until it jumped over the fence into newer pastures which seemed much greener.

The results of ten years' activity are known to every one. About the only thing that can be said is that it never did itself any good, nor anyone else.

Some day, history will reveal the details of the utter incompatibility of the Bell factory ambition and the real needs of the licensee company.

There are many prophets in the Independent ranks who do not believe that the Bell factory has permanently withdrawn from the Independent telephone field. There are Bell factory

salesmen who believe likewise that the retreat is but temporary and the line will be reformed in the process of a few months.

It is true, too, that the Bell factory salesmen are still on the ground in search of orders—but that does not mean much. It is foolish to think that ten years' work will be undone in a few days. It is safe to say that for all time the Bell factory will have all it can do to take care of its own needs.

We know that the Bell factory lost money on its sales. The Central Union case showed numerous contracts in which even factory cost was higher than the sale price. It was revealed that every sale of a switchboard by the Bell factory met with protest from licensee officials.

While it seemed to be plausible that all Bell men were factory salesmen, the fact remains that great bitterness was caused by almost every sale.

We know that the Bell factory's books indicate some wonderful long-time credits. And we know that some of them will run down the long corridors of time unless the philanthropic organization finally decides to charge them off.

We know now that Independent telephone men will not stand in line to hand any institution an order. Above all, we can realize that human nature to try forbidden fruit, has been fully satiated.

We know the relief felt by the Bell factory, when it gets back to the old methods, will be something akin to the feeling of a man who gets back from a picnic to his own door sill.

There is a joker in the licensee contract. It comes under the head of delays. As previously said, the licensee is under no compulsory obligation to buy from the Bell factory. The contract said that in no case must the telephone company buy unless it wanted to. Yet paragraph eight of the contract says:

"It is agreed that whenever the president of the telephone company shall be of the opinion that the electric company has failed or is likely to fail in its obligations, the telephone company may, without notice or demand, *purchase* elsewhere such apparatus, supplies or material which may be required to meet the emergency."

This seems to prove that the ordinary telephone manufacturer has a fine and even legal chance to sell a Bell licensee something. In other words, another cinch for the Bell factory.

It is a well known fact that even the Central Union Telephone Co. is being held up by lack of deliveries. It is also known that the Central Union company could conveniently buy many hundreds of thousands of dollars' worth of material in the open field. But it won't do it, even though the company is in the hands of the courts.

Undoubtedly, the Bell factory contract is unbreakable, even though it must not be construed that licensee companies are bound to buy unless they desire. Show one president of a licensee company who even knows that other telephone apparatus will work.

In numerous ways, we Independents have one great cinch—that is liberty. Each telephone man can do as he pleases without fear of displeasure of a superior who is anxious to make a showing at an inferior's expense.

We are not taken young and drilled into a life that fits us for only sheltered existence. We are not akin to the canary bird which can only make a fair showing in a cage.

It is a horrible thing to be around 45 and never employed by anyone else, especially when a change in policy or administration makes changes throughout. There is nothing so pitiful as an old and still useful employe called in to a desk and allowed to die or decay there. That is one penalty of a sheltered existence.

You remember how all the boys envied Huck Finn because he slept in a hogshead, or any place he saw fit. He could go swimming and could play hookey with no parental restraint. Every man who has his own business knows something of this feeling—he, at least, can exercise initative and be akin to a man anyhow.

Nothing is so pathetic as a life under large corporation rule, which gives no man authority to say yes or no until tradition has answered the question itself. Having a cinch has its drawbacks.

Regarding the withdrawal of the Bell factory from the Independent field, be sure that no employe knows anything about its true inwardness.

Some of our Independent prophets may have inside information that the matter is but temporary. And some are so constituted that they hope it is but temporary. But the stern, hard fact remains that common sense has not completely deserted the Bell brain.

Whatever the Bell motives were for entering the Independent field, they have been found wanting in results. In all the ten years of the Bell invasion, they did not reveal one single meritorious reason why they should stay in the business.

Having a cinch in any business has more drawbacks than advantages. It is human that we must strive in some form or other. And the moment we cease to struggle for existence, we are practically dead or surely dying.

The very existence of an iron bound, exclusive, and monopolistic contract, such as the Bell factory enjoys or endures, is evidence of an unwillingness and inability to struggle and live on to a successful destiny. Industrial monasteries were never intended anyway.

Sometimes I believe this nation needs a deadly war to correct the featherbed tendencies of our corporate life. Corporate life strives first of all to kill individualism, but it is doubtful if it can entirely succeed.

A successful peanut vender is really a better business man than some corporation presidents. Possibly if these two men were the only survivors of a great earthly cataclysm, the individualistic peanut man would survive him.

MORAL: Appearances generally deceive.

Plan For Merger at Bristol, Tenn.-Va.

After 20 years of active competition, the Bristol Telephone Co., of Bristol, Tenn.-Va., and the Cumberland Telephone & Telegraph Co. have agreèd on a plan of merger and Albert Parlett, manager of the Bristol company, is quoted as stating that a meeting has been called at which the plan of consolidating the exchanges and installing a new plant will be passed upon. It is understood that the terms of the agreement provide that the Bristol company is to control all lines between Marion, Va., and Greenville, Tenn., and that it is to have the operation of the Cumberland long distance service. A question of an increase in rates is involved and has been proposed to telephone users in the various cities.

National Convention to Be a Four-Day Session.

In connection with the coming annual convention of the United States Independent Telephone Association, which is to be held in Chicago, it has been decided to hold a four-day convention. The dates will be December 5, 6, 7, and 8. The association decided upon a four-day meeting in order that the exhibitors, who patronize the convention so generously, might be given a better opportunity than they have had in the past years. For this reason the morning of each day at this year's convention will be given over to the exhibitors and during the afternoon the exhibit rooms will be expected to be vacated and locked and everybody attend the program.

"Telephony's" Home Study Course for Telephone Men

A Complete Presentation of the Principles Underlying Modern Telephony in All Its Branches—Arranged Systematically So That Regular Reading and Faithful Study Will Qualify Ambitious Men for Higher Positions—Prepared Under Supervision of Stanley R. Edwards—This Section Written by Jay G. Mitchell

Quiz Questions on the Preceding Installment.

437. When a line and cord circuit combination is not provided with transmitter battery feed reactances as a part of the cord circuit, how is the matter of feeding operating current to the transmitters handled?

438. Is it necessary that the line relay in Fig. 153 be double wound? If so, why?

439. How is the operation of the supervisory lamps in the circuit shown in Fig. 153 *marginal?* Is a marginal condition of operation ever satisfactory?

440. How does the resistance *X* (Fig. 153) preserve the busy test until the plug is removed from the jack?

441. In what respect is the busy test in Fig. 153 similar to that in Fig. 138?

442. In what respect is the actual location of the transmitter current supply reactances important and in what respects unimportant?

CHAPTER XIX. Typical Cord and Line Circuit Combinations (Concluded).

443. *Increased resistance reduces the trouble.*—In an effort to reduce the gravity of this condition, relays of this general character have been used in which the windings were composed of a greater number of turns than before and had a correspondingly higher resistance. While this, when properly done, increased the impedance of the relay windings and reduced the amount of ringing current leakage through them, it also involved an increase in their *resistance*. The increase

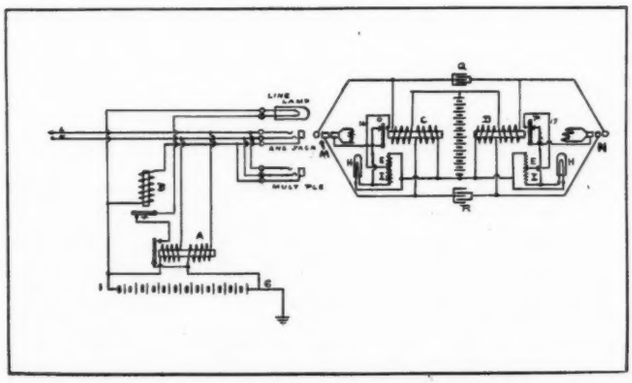


Fig. 155. Combination with High Wound Bridged Line Relay.

in *resistance* rendered them less suitable for the transmitter supply current reactances and it was found necessary, for this and other reasons, to provide auxiliary current supply reactances in the cord circuit proper to assure the satisfactory operation of the connected telephones. A line and cord circuit combination of this character is shown in Fig. 155. This schematic circuit should be compared with the one shown in Fig. 147.

While this arrangement reduces the trouble due to the gradual destruction of the line relay adjustment, it was still subject to this trouble to some extent. The increased impedance of the bridged line relay, *A*, and the use of ringing current of somewhat *higher frequency* than usual, enabled telephone companies operating this type of equipment to give, however, a very high grade of service. Neither this circuit nor any other that employs a line relay permanently bridged across each telephone circuit, is now considered standard. Their interest value lies in the fact that there is undoubtedly considerable equipment of this character in operation and also as an illustration of the fact that telephone switchboard apparatus must always be so designed as to furnish not only the most efficient *telephonic transmission*, but also the most efficient performance of the auxiliary functions of a telephone, operating without creating any conditions injurious to the most satisfactory continued condition of the equipment itself.

A great number of common battery switchboard circuit combinations have been developed as the result of competition, but, aside from details of equipment and wiring, they may all be placed in some one or more of the typical classes discussed. This is even true, as to the *line circuits* of automatic and semi-automatic switchboard circuits.

While there are, of course, no cord circuits used in the last-mentioned systems, the "landing" of the connecting means upon the terminals of the individual line is similar, in many ways, to the insertion of the plug in the jack by the operator at a manual switchboard. For this reason, the line circuits are very similar to those used in manual equipment. The exact arrangement will be touched upon later when the general principles of automatic and semi-automatic switchboard systems are under consideration.

444. *The click in the subscriber's telephone receiver when operator answers.*—One of the most common criticisms by the general public in the early days of the common battery system, was due to the click in the telephone receiver. It was very loud in comparison with those formerly found in local battery systems. The click occurs when the connections are changed from those for signaling to those for talking, by the insertion of the answering plug in the jack.

While the actual importance of the click has been found to be small, the notice accorded to it at the time, served to bring out those properties of circuits that have the effect of reducing it to a minimum. Several expedients were worked out by

inventors to accomplish this. Telephone users have now learned by experience that, in the present standard types of central office equipment, clicks of various degrees of strength and character are incidental to telephone operating and that it is

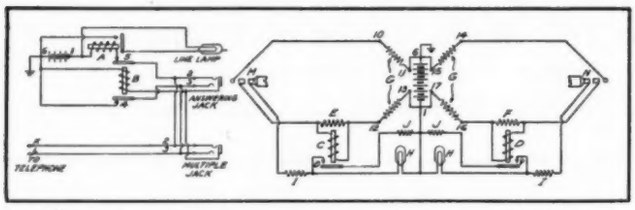


Fig. 138. Three-Wire Repeating Coil Battery Feed Cord Circuit.

wise to hold the receiver some distance from the ear until actually ready to begin conversation.

In the circuit shown in Fig. 138, the line relay is not wound in one coil as shown. The winding is placed upon the core in two equal sections, one end of each of which is connected to one terminal of the common exchange battery. In this way the current for signaling the operator is fed out to the line circuit through two magnetizing coils having equal resistances.

When the calling receiver is removed from the hook, the telephone condenser is partially discharged, assuming that the instrument circuit is one in which the condenser is retained in circuit with the receiver under talking conditions. When the answering plug is inserted in the jack by the operator, the partial charge of the condenser is maintained through another circuit. The operation of the cut-off relay removes the *original connection* with the common battery and substitutes for it an alternative path from the battery through the two windings of the repeating coil in the cord circuit.

The condition of charge of the condenser is, therefore, undisturbed since an equal resistance is interposed between each of its terminals and those of the battery. This is exactly the same charging condition as that through the two windings of the line relay before the cut-off relay is operated. In any possible readjustment of the condenser charge, a sudden flow of current in one direction or the other through the condenser and receiver, causes a more or less perceptible click.

445. *The prevention of clicks in the receiver when operator answers.*—It is plain that the method of preventing clicks in the telephone receiver is merely the prevention of sudden rushes of current through the receiver winding. Such sudden rushes of current are much more likely to be the result of condenser or line capacity discharges than anything else.

Suppose that the line relay in Fig. 138 should be actually wound in one coil as it is shown for the sake of clearness. One terminal of the telephone condenser would be connected to the grounded terminal of the common battery through the resistance of only one side of the line and the other one to the non-grounded terminal through the resistance of the line relay winding.

Then when the answering plug is inserted, it would be necessary, in order to obtain equilibrium of the charge over the cord, to lower the potential of that terminal of the condenser connected to the ground and to raise the potential of the terminal connected to the non-grounded terminal of the battery. As a result, a sudden flow of current is passed through the condenser and receiver causing a disagreeable click of greater or less strength.

By dividing the line relay winding so that both terminals of the telephone condenser are left by the operation of the cut-off relay at the same potential as they will necessarily have after equilibrium has been restored when the plug has been inserted and the cut-off relay operated, no such readjustment of potentials is required, the sudden flow of current through the receiver does not take place and the click is eliminated.

446. *The absolutely clickless circuit combinations.*—It is quite evident that the entire group of line and cord circuit combinations in which the line relay is *permanently* bridged across the line circuit, should be free from all clicks due to the insertion of the answering plug in the jack. This is true because all line relays of this type *must* be wound with two equal coils in order to maintain the inductance reactance balance of the circuit. Therefore the current supply to the telephone is *never entirely interrupted* and there is no opportunity for the equalizing condenser charging currents to flow through the condenser and receiver.

In connection with other line circuits designed to prevent an objectionable click in the subscriber's receiver when the operator answers, it is interesting to note the arrangement shown in Fig. 156. The line relay, *A*, is also provided with two windings of equal *resistance*. One of these windings is wound *non-inductively* and for that reason it has no part in the operation of the line relay when a call is being made. As a matter of fact, aside from the sole consideration of wiring convenience and manufacturing expediency, the non-inductive winding could be placed upon another spool.

The cord circuit used with this line circuit (Fig. 156), when it was first placed upon the market, is well worth passing attention. The relays, *E* and *F*, are provided with an armature arranged so that a spring represented by *I* holds it against the armature of the supervisory relays, *C* or *D*, as the case may be. When the plug is inserted into the jack, the relay, *E* or *F*, is energized and the detent removed from the armature of the corresponding supervisory relay, *C* or *D*. The armature of *C* or *D* being now released from mechanical restraint and free to fall back, closes the circuit of the supervisory lamp, *H*, and retains this circuit in a closed condition until again operated.

When *C* or *D* is energized, the armature breaks the circuit of the supervisory lamp, *H*, at the contact 5. So long as the

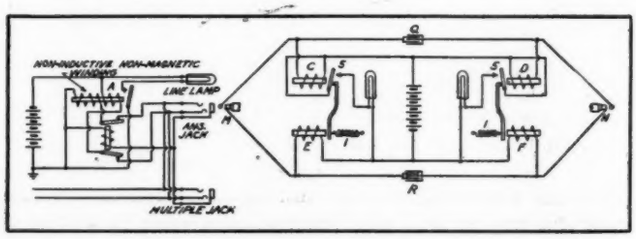


Fig. 156. Arrangement for Preventing Click in Receiver.

plug *remains in the jack* and *E* is energized, the armature of *C* is free to respond to the condition of the telephone circuit. When the plug is removed from the jack, the attraction of the relay, *E* or *F*, for its armature is destroyed; the spring causes its armature to operate the armature of the supervisory relay

and the supervisory lamp circuit is kept open and the lamp is kept dark until the plug is again inserted in the jack.

This was one of the most common two-wire cord circuits in use in manual equipment a few years ago. It is very interesting in that *mechanical* means are used instead of electrical means, to open the circuit of the supervisory lamp when the cord equipment is not in service.

(To be Continued.)

Picnic Held by Benton County Association.

The picnic held by the member companies of the Benton County Independent Telephone Association, of Monticello, Ind., on July 20, was an occasion that will linger pleasantly and long in the memories of the 170 persons participating.

The entire party, composed of managers, owners of plants, linemen and supply men, wives and members of the families of the telephone men, and about 60 operators, was transported in automobiles to the picnic grounds where a big dinner was served and ice cream, lemonade, pop, etc., were on tap all day.

Everybody was at liberty to enjoy himself or herself as best suited individual tastes, and it seemed that most of the guests had a taste for boating and bathing.

Operators who have talked with other operators in the exchange of business for so long a time without having seen each other's faces, met and became acquainted and enjoyed at close range a friendship that was formed over the long distances. As one operator put it, it was just like the reunion of one big happy family.

The Indianapolis Telephone Co., of Indianapolis, Ind., the Cracraft-Leich Electric Co., of Genoa, Ill., the Kellogg Switchboard & Supply Co., of Chicago, and the Mid-West Supply Co., of Plymouth, Ind., donated all of the prizes awarded in the various contests.

Proceedings Before Commissions, Courts and Councils

Discussions and Rulings of State Bodies Having Supervision Over Telephone Companies, Decisions of Courts in Matters of Interest to Public Utilities and Actions of City Councils Relative to Franchises, Rates and Service

I. C. C. Ruling On Interstate Toll Rates.

The Interstate Commerce Commission, in a ruling handed down June 23 in Case No. 8,345, L. B. Malone vs. the New York Telephone Co., et al., held that telephone calls may be classified and a through rate for one kind of service is not necessarily unreasonable because it exceeds an aggregate of intermediate rates for a different kind of service.

The commission also held that a through "particular person" rate of $1.65 from Flushing, N. Y., to Canaan, N. H., composed of a rate of 15 cents for the first three minutes and 5 cents for each additional minute on calls from Flushing, N. Y., to New York City for beyond, and $1.50 for the first three minutes and 50 cents for each additional minute on calls from New York City to Canaan, N. H., was not proved unreasonable by a hypothetical through rate of $1.55 between Flushing and Canaan composed of a 5-cent "two-number" rate from Flushing to New York City and a $1.50 particular person rate from New York City to Canaan.

It was further held that through calls at combination rates require fewer terminal services than separate calls under the rates combined, and combination through rates that include charges for terminal service not performed are unreasonable. The reasonableness of the contract provision under which the service of the complainant was discontinued, was not decided.

In its opinion the commission held that toll service differs substantially from local service and may reasonably be rated higher. The single fact adduced by the complainant, therefore, that the defendants charged more for toll calls from Flushing to Manhattan, for beyond, than for local calls from Flushing to Manhattan, is not enough to prove that the through rate charged for complainant's calls was unreasonable. Furthermore, the commission stated, purely intrastate rates cannot lawfully be included among the rates aggregated unless they are available for interstate application. The five-cent rate cited by the complainant from Flushing to Manhattan was and is exclusively an intrastate rate that is inapplicable and is never applied to interstate service.

The commission ordered that the complaint in this proceeding be dismissed.

More Time Sought to Rearrange Electric Wires.

More than 30 telephone, telegraph, light and power companies appeared before the California Railroad Commissioners recently to plead for extensions of time in which to comply with the law of 1911, which provides for such an arrangement of electric wires on poles as will insure safety to life and property.

This law was amended in 1915 so that companies might, upon justification, be granted extensions. The companies claim that if they are compelled immediately to reconstruct their systems to conform to the law, it will involve a total expense of about $5,000,000. What they want to do is to perform the work gradually and in the regular course of reconstruction. Thus, they say, they will be able to absorb the extra expense and still protect life and property.

Representatives of the Brotherhood of Electrical Workers were present and, by their cross examination of company witnesses, indicated that they want the work done immediately.

Attorneys for the Pacific Gas & Electric Co., and the Pacific Telephone & Telegraph Co. stated that their companies were in entire sympathy with the law. Since 1911 they have reconstructed, in conformity with the statute, about two-thirds of the work. The Pacific company estimates it would cost $1,500,000 if they were compelled to do the work immediately and keep at it until finished. The Pacific Gas & Electric Co. figures the cost to be about $250,000.

Informal Opinion of Minnesota Commission on Connection.

In reply to an inquiry from H. Moork, of the Aitkin-Deerwood Telephone Co., Aitkin, Minn., as to whether the Northwestern Telephone Exchange Co. would have any cause for damages if his company should make a physical connection with the Tri-State Telephone & Telegraph Co. at Aitkin without the consent of the Northwestern company, the Minnesota Railroad & Warehouse Commission, on July 25, rendered an informal opinion as follows:

"The commission has reviewed the contract which you have entered into with the Northwestern Telephone Exchange Co. which provides that the Northwestern shall have the exclusive right to connect the exchange of the Aitkin-Deerwood Telephone Co. with all outside points which are served by the Northwestern company or its connecting companies and that no connection should be made with outside lines except through the Northwestern company without its written consent. This contract, by its terms, became effective December 1, 1910.

A review of the decisions where contracts of similar nature had been passed upon shows that the courts are not harmonious. Some of the earlier cases hold that such contracts are valid and one or two more recent cases hold that such contracts are void, as against public policy. Our own supreme court has not had occasion to pass upon the question. Our statute provides that

Whenever public convenience requires the same, every telephone company shall, for a reasonable compensation, permit a physical connection, or connections to be made.

and also provides that

Where the telephone companies fail to connect or agree upon the terms and conditions upon which the same should be made, an application may be made to the commission.

The commission finds it is unable to advise whether the contract is a legal instrument, but it does suggest that if your company is of the opinion that public convenience will be promoted by a connection with the Tri-State company, at Aitkin, you should make it. Then the Northwestern company is in a position where it can, either by a damage suit or an injunction proceeding, try out the merits of the contract. It is better, in our judgment, for the public to receive service through this connection than to withhold such service pending the determination of the validity of the contract in the courts."

Placing Patron On Same Line With House of Ill Repute.

Suit has been started by Herbert J. Rushton, prosecuting attorney of Delta county, Mich., against the Michigan State Telephone Co., to recover about $143,000 in penalties under act 301 of the 1909 legislature which specifies that a telephone company operating in the state of Michigan shall not supply such telephonic service to any house of ill repute, assignation house or any other like place under police surveillance, nor to any saloon, over the same party line which serves any private residence with telephone connections, under penalty of not less than $25 or more than $100 for each and every day such neglect or refusal shall continue.

The plaintiff alleges that the defendant conducts the business of supplying the public with telephones and telephone service in Escanaba and sets up three instances where it furnished telephone service to private residences and certain saloons over the same party line. The allegations of the plaintiff cover service of that character for 1,428 days for which a penalty of $100 a day or $142,800 in penalties, in all, is claimed.

This suit was filed a month or more ago and in all probability will be tried before Judge Flannigan at the October term of court. The defendants demurred to the original complaint on two points, which were sustained by Judge Flannigan in a decision given on July 15.

Obligation of a Telephone Company in Furnishing Service.

A telephone company maintaining lines and exchanges to afford patrons the means of telephonic communications, must exercise a degree of care and skill commensurate with its undertaking, and all reasonable means within its control must be employed to secure effective and efficient service. The company, however, is not an insurer, and is not liable for a tortious breach of duty because its service is interfered with or rendered ineffectual by uncontrollable causes not traceable to negligence or intentional misconduct.

The failure of a telephone company installing a telephone in a residence for a consideration to give any service at all, or to render effectual or sufficient service, is prima facia evidence of negligence of the company or its employes. To escape liability therefor, it must show that the cause was unavoidable by the exercise of due care and diligence, or was the result of acts for which it was not responsible, either directly or in consequence of negligent omission to employ due care and skill to discover the effect of such acts and to remove them after becoming aware thereof. Vinson vs. Southern Bell Telephone & Telegraph Co., Supreme Court of Alabama, 66 Southern, 100.

Petition to Block Chicago Automatic Sale Up This Week.

When attorneys for the Chicago Telephone Co. insisted that the hearing on the petition to restrain that company from paying $2,532,000 for the automatic telephone system of the Chicago Tunnel Co., be held on July 20, Attorney Fayette S. Munro withdrew the petition and asked permission of Judge Landis to take up the case again this week.

As reported in a previous issue of TELEPHONY, the petition was filed by Attorney Munro in behalf of Otto Cullman, of Chicago, a stockholder of the Chicago Telephone Co., who alleges that the proposed payment is being forced on the Chicago Telephone Co. on the part of the American Telephone & Telegraph Co. as a part of the plan of the latter to gain a complete monopoly of the operating telephone business of the United States. The telephone company's lawyers raised the point that Mr. Cullman could not take action because he had purchased his stock after the acts charged in the petition had taken place.

Gainesville (Texas) Council Authorizes Merger.

The city council of Gainesville, Texas, at a meeting held July 5, passed an ordinance authorizing the merger of the properties of the Peoples Home Telephone Co., and the Southwestern Telegraph & Telephone Co., in Gainesville, Texas. The Southwestern company is to take over the Independent plant and consolidate the two systems.

Summary of State Commission Hearings and Rulings.

ARIZONA.

July 17: Hearing on complaint of F. L. Merdick, a farmer residing seven miles out of Glendale, Ariz., relative to the rates charged by the Mountain States Telephone & Telegraph Co.

CALIFORNIA.

July 11: Hearing on application of the Nevada-California-Oregon Telephone & Telegraph Co. for authority to issue and sell $15,000 of its 6 per cent. first mortgage sinking fund gold bonds. The bonds are to be sold at 80. Of the proceeds $6,000 is to be used in building a toll line from Cedarville to Alturas and $2,550 for building an exchange at Cedarville. The balance will be used for reimbursing the company's treasury.

July 17: The Pomona Valley Telephone & Telegraph Union, of Pomona, Cal., was authorized by the California Railroad Commission to invest as working capital $26,425.88 received from the sale of its bonds, pending the investment in improvements to its plant.

FLORIDA.

August 1: Hearing at Tallahassee relative to charge against the Marianna Telephone Exchange, Marianna, of alleged violation of section 3, chapter 6,525 of the Florida laws. The specific charge is that the Marianna Telephone Exchange is alleged on June 1 to have failed to keep in good condition and repair, the facilities, instrumentalities and equipment furnished by it, having disconnected its wire, or line at Alliance, Fla., from the wire or line of the Barfield Telephone Co., thereby discontinuing a service it had been rendering prior to June 1.

IDAHO.

July: Permission granted the Pacific Telephone & Telegraph Co. to increase its rates on toll calls between Grangeville and Cottonwood.

July 17: Complaint filed with the commission by the Mountain States Telephone & Telegraph Co., asking that construction work on a telephone system being built in Rupert by the Project Mutual Telephone & Electric Co. be stopped on the ground that the defendant company has never been granted a certificate of convenience and necessity.

ILLINOIS.

July 20: Beecher City Telephone Co. permitted to issue $2,500 of its capital stock, granted a certificate of convenience and necessity, and given permission to purchase the system of A. C. Larimore at Beecher City for $2,000.

July 20: Massac County Telephone Co., Metropolis, Ill., permitted to issue $1,000 of its capital stock.

July 20: Baker Telephone System, of McLean, giving permission to issue promissory notes in the sum of $6,000 to retire other notes.

July 20: Murphysboro (Ill.) Telephone Co. granted a certificate of convenience and necessity in Ewing and given permission to purchase the telephone system of the Franklin County Telephone Co. in Ewing.

July 20: Kinloch Long Distance Telephone Co. and the Litchfield (Ill.) Telephone Co. given permission to operate their lines in connection with each other.

July 24: Hearing before Commissioner Yates at Springfield on the application of the receivers of the Central Union Telephone Co., the Boynton Telephone Co. and the Union Telephone Co. for an order approving the closing of the exchange at Riddle Hill; also the approval of sale by the receivers of the Central Union Telephone Co. and purchase by the Boynton Telephone Co. and the Union Telephone Co. of certain portions of the exchange at Riddle Hill, Ill. Case 5,287.

July 25: Hearing on the application of the Automatic Home Telephone Co. for an order authorizing the issue of its notes in the sum of $14,500.

July 25: Hearing before Commissioner Thompson in Chicago in the matter of the application of the Galva Telephone Co., of Galva, for an order authorizing the issue by the company of its notes in the aggregate amount of $2,742.50. Case 5,368.

July 26: Hearing before Commissioner Thompson in Chicago relative to the application of the DesPlaines Telephone Co., of DesPlaines, for an order authorizing the issue by the company of its three 15-year 6 per cent. extension and refunding mortgage gold bonds, dated July 1, 1912, and due July 1, 1927, in the aggregate amount of $10,000. Case 5,365.

KANSAS.

September 12: Postponed hearing on application of the Missouri & Kansas Telephone Co. for permission to increase its rates at Wellington, Kan.

MINNESOTA.

August 3: Hearing at Thief River Falls in the matter of the complaint of the Red Lake, Eastern Marshall Farmers Telephone Co. against the Eastern Development Telephone Co. for discrimination in telephone rates within the village of Goodridge, Minn.

MISSOURI.

July 19: Hearing on the complaint of the Prairie Home Telephone Co., a rural line near Oak Grove, vs. the Oak Grove Telephone Co. The Oak Grove company formerly furnished switching service to the Prairie company at 25 cents a month per subscriber. About a year ago the rate was raised to 50 cents. The Prairie company refused to pay the increased rate and its switching service was discontinued. The commission is asked to compel the Oak Grove company to restore the old rate.

July 24: Continued hearing on the application of the Central Missouri Telephone Co. for an increase in capital stock and to fix rates for service in Fulton, Mo. Cases 739 and 852.

July 25: Hearing in Jefferson City in regard to the application of the Citizens Telephone Co., of Fredericktown, Mo., to issue stock. Case 1,025.

September 18: Hearing in the matter of adopting a uniform system of accounts for telephone companies. Every telephone company in the state has been given notice that it will be expected to be present or to be represented, and to introduce any evidence necessary to assist in the promulgating of a uniform system of accounts for telephone companies. Case 937.

September 18: General conference in which representatives of all telephone companies in the state are to meet with the commission and to introduce all testimony and evidence required in the adoption of uniform rules, regulations and practice.

NEBRASKA.

July: Protest filed by three stockholders of the Surprise Telephone Co., of Surprise, Neb., against the proposed sale of part of the company's holdings to the Lincoln Telephone & Telegraph Co.

August 1: Hearing at Curtis in regard to connection of the toll line of the Nebraska Telephone Co., terminating at Curtis, with the Curtis Telephone Co.

August 11: Hearing on application of the Kearney Telephone Co. for permission to increase its rates conditional upon the plan for the consolidation of the Bell and Independent exchanges in Kearney, Neb., being carried through.

OHIO.

July 21: The Ohio Public Utilities Commission made an entry fixing the final valuation of the property of the Lima Telephone & Telegraph Co., in the case of the City of Lima vs. the Lima Telephone & Telegraph Co. Notice of the valuation placed upon the property by the commission in 1915 was filed with the company and the City of Lima on November 17, 1915. Protest having been filed by the company against the valuation, the matter came up for further consideration and was argued by counsel. Having made such changes in its former valuation as in its opinion are necessary, the commission has ordered that a present value of $700,718.30 be placed upon the properties of the Lima Telephone & Telegraph Co. The reproduction value of the property, as determined by the commission's engineers, is $845,404.86. An allowance of $144,686.56 (17.1 per cent.) is made for depreciation, making the present value $700,718.30. Case 443.

August 9: Continued hearing at Columbus, Ohio, relative to the proposed merger of the Bell and National telephone companies in Bellaire, Ohio.

SOUTH DAKOTA.

July 18: In considering the case of Dell Clement vs. the Banner Telephone Co., of Tennis, S. D., relative to the refusal of the defendant to furnish service to the plaintiff, the complaint was consolidated with other matters at issue. A hearing in the matter was held on June 23 and a thorough investigation made into the practices and charges of the defendant telephone company, after which the commission entered an order which is, in substance, as follows:

That the Banner Telephone Co. is required to enter into written contracts with the Dixon Telephone Co., of Seneca, and the Hyde County Telephone Co., of Highmore, and, in fact, with all companies with which it has switching connections, either direct or indirect, and that certified copies of such contracts be filed with the commission within 30 days.

That it establish and put into effect a schedule of reasonable rental rates and file with the commission a certified copy thereof, such schedule to include not only its rental rates but also all rules and regulations in connection with the collection thereof.

That the Banner Telephone Co. construct the necessary extensions, install the necessary station equipment and give the complainant, Dell Clement, telephone service on or before September 1, 1916, the complainant to enter into a service contract with the defendant, the terms and conditions of the contract being that the complainant will pay to the defendant its regular rental rates reasonable in advance, and that the complainant will abide by and conform to the reasonable rules and regulations of the defendant. Case F—319.

WISCONSIN.

July: The Wisconsin Railroad Commission allowed telephone extensions as follows: By Wisconsin Telephone Co., in the town of Burlington, Racine county; by Elroy Telephone Co., in the town of Fountain, Juneau county; by Wisconsin Telephone Co., in the town of Rock, Rock county; by Wisconsin Telephone Co., in town of Port Washington, Ozaukee county.

July: By order of the Wisconsin Railroad Commission the following stock and bond applications have been granted to telephone companies: Fond du Lac Rural Telephone Co., to issue $500 of stock for extensions and additions; Clover Telephone Co., to issue $760 of stock for extensions.

July: Application filed by the Clayton Rural Telephone Co. for authority to issue $775 of stock for extensions and additions; by the Strum Telephone Co. for $40 of stock for extensions of lines and purchase of additional equipment, and by the Wisconsin Telephone Co. for authority to issue $988,000 of stock for construction, acquisition, extension and improvement of its plant distribution system and facilities.

July 14: In re application of the Reedsburg Telephone Co. for authority to increase rates, the Wisconsin Railroad Commission ordered that the company may put into effect a penalty provision of 15 cents per month for local service and may amend its rural service rate to be $3.75 per quarter, with a discount of 75 cents if paid during the first month of the quarter, 50 cents if paid during the second month, and 25 cents if paid during the third month. The application is in all other respects dismissed without prejudice.

"In view of the fact," the decision states, "that the applicant, the Reedsburg Telephone Co., has under way the rebuilding of its lines with the view of making all its circuits metallic within the next few years, we are of the opinion that the rates and toll privileges now in operation should continue in operation until such time as the present system shall have been rebuilt. If at that time it seems advisable to seek an adjustment of the rates, the toll situation will be thoroughly investigated and any adjustment made that will make all rates just and reasonable."

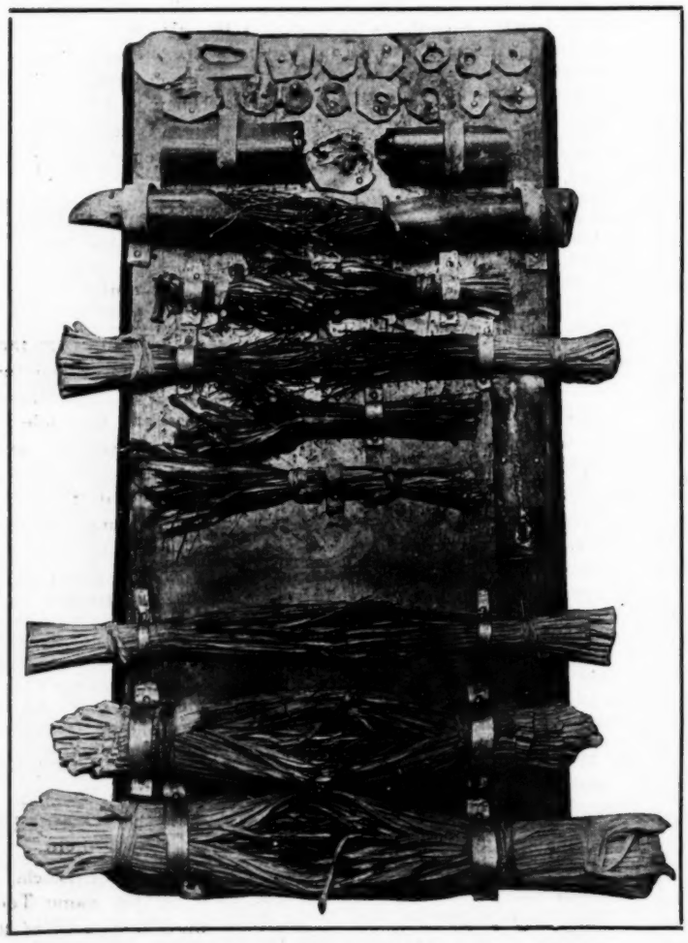
Practical Subjects—Letters and Discussions

Damage Done by One Stroke of Lightning.

The Lebanon, Tenn., exchange of the Cumberland Telephone & Telegraph Co. recently suffered what is believed to be the record for damage from one stroke of lightning, according to the Southern Telephone News, the employes' magazine of the Southern Bell and Cumberland telephone companies.

This stroke of lightning burned one span of an open wire route of 30 wires before it hit the cable, and 380 feet of 50-pair cable was burned so badly that it had to be replaced. It was also necessary to replace 16 feet of 100-pair cable and ten feet of 150-pair cable. One 25-pair pothead on the end of a route was burned and four 14-C terminals were damaged beyond repair.

The 400-pair cable leaving the office, which is approximately three-fourths of a mile from the end of the cable, was burned in two places. Not including the 380 feet of cable replaced, the trouble was cleared in the rest of the cable on this same route in 52 different places and in seven



Portions of Cables Showing Damage Inflicted by Lightning.

places in another route which branches from the main route.

There were 92 company stations and 16 farmers' circuits, carrying 100 stations out of service.

The pieces shown at the top of the photograph reproduced in the accompanying illustration, were cut out of the cable at each place where lightning had blown holes through the cable. The cable, pieces of which are shown in the third row from the top, was burned in two and the little piece of lead in the center was cut out of this cable. The two pieces at the bottom were damaged in the center, but the armor of the cable was not damaged.

All of the scattering trouble on this job was picked up with a Matthew's telefault. Most of the telephones were put back to work by two cablemen with the help of the regular exchange men in ten days. After that it required about two weeks with three men to make permanent repairs.

The Self-Satisfied Director.

By B. Franklin Oneliner.

We have all read of the Pharisee
* * *
Who, when he prayed, prayed in public.
* * *
His prayer was simply giving the Lord an account
* * *
Of the good things He had done.
* * *
The other day I met a man who had just returned
* * *
From the annual meeting of his telephone company—
* * *
He was one of the directors.
* * *
"How was the meeting?" I asked.
* * *
"Oh, fine! fine! good reports, excellent.
* * *
Best year we ever had, financially."
* * *
And he patted his big, full vest in blissful satisfaction.
* * *
I congratulated him on the success of his company.
* * *
I was glad to hear how well they had done.
* * *
But I knew that this director's knowledge
* * *
Of his company's business
* * *
Was all acquired from the secretary's report,
* * *
And a flowery speech by the president.
* * *
Aside from this, he was as ignorant
* * *
Of his company's business methods.
* * *
And of its physical condition
* * *
As his six-year-old son.
* * *
I knew enough about his company to realize
* * *
At what awful cost to the welfare of his company
* * *
This report was possible.
* * *
Had this director decided to become acquainted
* * *
With the operation of his own company,
* * *
He could have learned that the only department
* * *
Which showed any real efficiency
* * *
Was the Collection Department;
* * *
That the most discouraging feature
* * *
Of its local exchange managers' work
* * *
Was in trying to induce the company
* * *
To furnish proper material for its most essential needs;
* * *
That the outlying exchanges never saw an inspector,

And had only a casual call from an official
* * *
Two or three times a year;
* * *
That the linemen received $2 per day;
* * *
That the rigs furnished them
* * *
As representatives of their company
* * *
Were a disgrace to both linemen and company;
* * *
And the operators' pay averaged $18 per month;
* * *
That the patrons were receiving a poor grade of service;
* * *
And the condition of the plant,
* * *
Except near the head office,
* * *
Was not a credit to any one.
* * *
I knew that all these things,
* * *
And many more of like nature, were only too true.
* * *
So the director's boast of success
* * *
Sounded to me like the prayer of the Pharisee.

"Telephony's" Home Course for Telephone Men.

(Not meant for study.)

By Well Clay.

A little sunbeam came one day,
From several million miles away,
Straight through a hole in our barn door
And hit a nail head in the floor.

I took a try once, like a dub,
To shoot a match with a gun club.
With graceful curves the birds of clay,
At least a hundred feet away,
Flew here and there before my gun
But I never hit a single one.

But you ought to have heard the noise I made! Had some fun, too; acquired a little experience and a large sized black and blue mark on the muscle of my right arm and shoulder. I learned that a gun kicks just as hard when it is fired without cause, as does a man. I also gleaned from the afternoon's sport, the disquieting fact that I was not much of a shot, though, I am bound to say, I pulled the trigger as hard as any of them.

It appeared that markmanship of a scientific degree is only attained after long and painstaking practice. To be the owner of a good gun and have unlimited quantities of ammunition of a superior brand of manufacture, is only part of the game. One must have a knowledge of various kinds of shells; be a good judge of trajectory; know how to make a quick and accurate allowance for wind pressure; and seventeen hundred other kinds and conditions of things.

After carefully reviewing the probable requirements, I decided not to become a regular subscriber to the organization's deficit.

It used to be that a telephone manager was easily and simply made by passing a resolution at the annual meeting of stockholders, whereupon the former druggist, bank clerk, buttermaker, clerk, or school teacher, or whatever handy available timber, was transferred into a manager and told to go ahead and make a success of the business. All that would be expected was that he run the business so as to take care of the regular items of maintenance and operating expense, provide for a good dividend, and see that all new business was promptly solicited and looked after without calling on the stockholders for any additional funds. Sometimes they hit the mark, if the company was small and had little growth, but just as often they missed the mark as far as I did. The resulting noise was just as loud but more lasting.

Having had a long distance booth in my office for nearly a year before going into the telephone business, I was consequently equipped with a technical training which will come handy—at least I expect it will if I ever find an occasion where it will apply. I do not wish it to be understood that I look down upon managers who are not possessed of the same amount of technical training that I have. The wonder is that so many of these men, diverted from other spheres of usefulness, entering a profession new to them and the public, for the most part, should have made even a mediocre success in any case. Yet a good many of them have.

A change did them good, perhaps. It all depends on what a man takes to whether he is successful in it. I know a man who is so expert with a jack knife that he can whittle out a wooden chain inside a bottle with a small neck. Yet he seems to shrink from the really ordinary work of bringing water for his wife to wash with.

If you are interested in the job you are on, you stand a better chance to make a success of it than if you are only doing it to accommodate some one.

I read in TELEPHONY, recently, an article from the able but penurious pen of B. Franklin Line at a Time, to the effect that a good many managers are drifting with instead of surging against the tide, and ought to be fired. Some managers are surging against the tide and some are tied against the surging; that is to say, their activities are circumscribed and restricted by their directors who, as a general thing, are all in other lines of business themselves. Their only real interest in the telephone game is to collect a reasonable dividend and to just barely supply the demand for service as cheaply as possible.

They are against enlarging the sphere of their activities except as a last resort, in any such new enterprises as trying to reach out after new business. That would require new capital, either from their own pockets from which it comes grudgingly, or from the sale of new stock with the consequent danger of having new investors as aspirants for their positions on the board. The latter is a condition which they do not like to contemplate. They recognize that the telephone exchange is an institution which is necessary and desirable for the convenience and comfort of the public, like the public parks or any other part of the scenery, but they do not see why they should bother to change one more than the other.

One likes to run in a rut because it usually runs smoother. Would it be right to fire the manager of such an exchange who so ably reflects the desires of his employers—otherwise they would fire him themselves—or would you let him drift along with his exchange and be a part of the scenery? He may be hitting closer to the mark at which he is asked to aim than many livelier ones for all we know. Activity is sometimes the result of ambition and sometimes from the influence of a few hornets.

APHORISM: The angle of observation often changes the view.

Venezuelans to Buy New Telephone Equipment.

The local telephone company in Maracaibo, Venezuela, a privately owned corporation operating under the name Teléfonos de Maracaibo, has a single equipment, of a capacity of 400 subscribers, but only 300 telephones are now in use. On account of increasing business the company will soon purchase another switchboard according to U. S. Consul G. K. Donald. The equipment now in use was made in the United States. The lines are single with a ground return. A battery system is used, but calling is done by magneto.

The rate for both business and private telephones is 16 bolivars ($3.09) per month, unlimited. No telephone directory is issued; calling is by name, not by number. Private "interphones" are used to some extent by commercial houses and plantations. These are for sale by local firms.

Fundamental Principles of the Telephone Business

A Reading Course Designed to Present Logically the Principles Which Underlie Successful Organization and Operation of Telephone Properties—Prepared Under the General Supervision of Stanley R. Edwards—Part I, Telephone Economics, by James H. Shoemaker, Completed June 26, 1915—Part II, The Corporate Telephone Organization, by J. C. Kelsey and S. R. Edwards, Completed September 25, 1915—Part III, Telephone Accounting and Auditing, by James H. Shoemaker, Completed January 15, 1916—Part IV, Telephone Finance, by J. C. Kelsey and S. R. Edwards, Completed June 3, 1916—Installments Now Being Presented Comprise Part V, Telephone Advertising and Publicity, Written by Roy D. Mock

Quiz Questions on the Preceding Installment.

27. What is the function of the reading matter of an advertisement?

28. State two requisites of successful advertising. Why are the layout and the copy of equal importance?

29. What is the best kind of advertising copy?

30. What must be borne in mind in writing copy for an advertisement?

31. What is essential to writing an advertisement?

32. Of what importance are brevity and naturalness in the copy of an advertisement?

33. Is it possible to classify advertising copy?

34. What is the "personification" type of copy? What objection is made to its use?

35. Suggest some headings for telephone advertisements pointing out specific use of the service. What advantages are gained from the use of such advertisements?

CHAPTER IV. Advertising Copy (Continued).

36. *Association of News Events With Telephone Advertisements.*—A good example of advertising with news value is shown in Fig. 27. Run immediately after a heavy storm it would carry an unusually strong appeal. The heading is somewhat weak, as it says nothing at all about the storm. This advertisement, if headed, "How The Telephone Helped Clear The Streets," would have been much more effective.

Fig. 28 exhibits a timely and newsy advertisement, as nothing possesses a greater news value at the present time than

Sunday, Dec. 26 was Telephone Day.
THE telephone service of New York City was a real "friend in need" during the recent blizzard.
With all other methods of communication seriously hampered by the severe storm, the burden of the city 's communication fell on the telephone system.
This unexpected flood of telephone traffic was handled smoothly and on a no-delay basis.
The Street Cleaning Department organized its work of snow removal by telephone. "Big Bill" Edwards, the Department Chief, himself made over three hundred telephone calls.
Everybody used the telephone. Delays were explained, engagements postponed; holiday greetings that were intended to be conveyed in person were sent over the wire.
"What would I have done without a telephone?" was the predominating thought in the minds of thousands of people.
By the way, have you a telephone?
NEW YORK TELEPHONE CO.
Every Bell Telephone is the center of the system.

Fig. 27. An Advertisement with News Value.

Biff! Boom! Bang!!
All Records Shattered!
Eighteen Hundred New Subscribers!
Friday, September 24th, We Had Received
1811
JOIN THIS ARMY
Call Contract Department No. 2751 and ENLIST TODAY
The Ohio State Telephone Co.
J. B. RHODES, Manager

Fig. 28. A Type of Timely and Newsy Advertisement.

a 42-centimeter gun. As a matter of arrangement, however, the 1,811 new subscribers should have been made more prominent—in other words, there should have been less "Biff! Boom! Bang!!" and more 1,811.

The Chicago Telephone Co. missed a magnificent opportunity to use an advertisement with a great deal of news in it

the day after the big preparedness parade in Chicago early in June. In this parade over 130,000 people marched and the movement of this vast volumn was directed by telephone, as related in TELEPHONY of June 10, page 20. The next day all the Chicago papers were filled with descriptions and illustrations of the parade and some publicity was given the telephone.

An Extension Telephone
In the Home
In the Home an Extension Telephone is a saver of stair-climbing, and should be placed on the floor above or below the main telephone.
In the Office
In the Office Extension Telephones save steps and time and should be placed at convenient points throughout the establishment.
Why not now take our suggestion for more complete telephone comfort? Why not install an additional telephone or two at points convenient for use?
The cost of an Extension Telephone is but fifty cents per month, in connection with a message rate contract.
Call our nearest Contract Office for complete information.
NEW YORK TELEPHONE CO.

Fig. 29. Combination of Sales and Educational Copy.

An advertisement of the Chicago Telephone Co. referring to the direction of this parade by telephone, would have been of unusually timely interest. It could have been made one of the most effective telephone advertisements ever run. But the Chicago Telephone Co. missed the opportunity presented.

When This Happens Trouble Begins
Fully seventy-five per cent of all telephone trouble is due to telephone receivers being left off their hooks.
The receiver should be kept on the hook except when in use. When it is left off the hook, your telephone is reported "busy" and then "out of order."
This causes loss of calls and in the case of a party line, all telephones on that line are deprived of all incoming and outgoing calls.
A little care will save lots of annoyance.
We appreciate co-operation.
CUMBERLAND TELEPHONE AND TELEGRAPH COMPANY
Avoid Trouble!
Always Put the Receiver Back On the Hook
Fully seventy-five per cent of all telephone trouble is due to telephone receivers being left off their hooks.
The receiver should be kept on the hook except when in use. When it is left off the hook, your telephone is reported "busy" and then "out of order."
This causes loss of calls and in the case of a party line, all telephones on that line are deprived of all incoming and outgoing calls.
A little care will save lots of annoyance.
We appreciate co-op-

Fig. 30. Purely Educational Copy—Fig. 31. A Revision of Fig. 30.

37. *Educational Advertising Copy.*—Examples of what the Bell people are doing in the way of educational copy are given in Figs. 29 and 30. The advertisement in Fig. 29 is designed to get new business by selling extension telephone service. It points out the advantages of an extension telephone, both in the home and in the office. The heading would have been greatly improved if it had read "Use an Extension Telephone!" for a direct command is always more forceful in advertising than a simple statement of fact, or the mere name of the article, as "Extension Telephone."

The advertisement reproduced in Fig. 30 is educational. It is not designed to sell new telephone service, but rather to enable subscribers to get a little better service out of the instruments they already have installed. The Bell people, for the most part, use advertisements which are well written and attractively laid out. But they seem to have a great deal of difficulty in fitting proper headings to their advertising.

"Th' only reason thet every fambly ain't got a tellyphone," decided Mrs. Jonathan Hep, as she nimbly side-stepped the falling flatiron, "is becuz nobuddy hez tried to proove thet it was fine for the complexyun."
* * * *
"I've got Jonathan to git me a Auttymatic tellyphone," explained Mrs. Jonathan Hep to her caller, "becuz I beleeve in th' idee of w'en you want a thing did right, do it yerself."
* * * *
"A man what ain't got a tellyphone at his bizness an' in his home," concluded Mrs. Jonathan Hep as she worked on her shoe, "may be well meanin' and kind, but he ain't got no head—his neck jest grew up with some hair on it."
* * * *
"Havin' a tellyphone put in is a hull lot like gittin' married," observed Mrs. Jonathan Hep as she rocked comfortably. "You keep wonderin' fer awhile before ef you kin afford it—but after you onct try it, you wonder how you was ever fool enuff to think thet you cud get along without it."

Fig. 32. "Hepigrams," Tri-State Novelty Advertising.

In this particular example (Fig. 30), the heading is hard to read. This is because the words are set into the cut too closely and the eye always rests first upon an illustration as the most attractive part of an advertisement. Notice how your eye unconsciously rests upon the telephone in this advertisement and what an effort it is for you to read the heading.

The entire advertisement would have been much more forceful if the illustration had less type above it and the main heading immediately below it, as shown in Fig. 31. The heading, "Avoid Trouble! Always Put the Receiver Back on the Hook," tells the entire story so that whether the advertisement is read or not, the message has been told.

38. *Advertising Novelties in the Copy.*—The Tri-State Telephone & Telegraph Co. of St. Paul, Minn., reports good

results from the use of a little advertising novelty known as "Hepigrams." These are run at the bottom of each Tri-State advertisement and lend some human interest, which is undoubtedly very effective. The view of Mrs. Hep's feet appears in each advertisement. A few of these Hepigrams, which are copyrighted by the Tri-State company, are reproduced in Fig. 32. *(To be Continued.)*

First Aid and Treatment of Injuries.

Representatives of the relief and safety department of the Chicago Telephone Co. are holding meetings with the employes of the various local exchanges on the subject of first aid and treatment of injuries. This is the latest feature of the company's welfare work to insure the health of its employes, thus maintaining the high degree of physical and mental efficiency, which is essential in order to furnish good telephone service to the public.

Simple but efficient methods of treatment cuts, punctured wounds, burns, fractures, etc., are demonstrated, and the danger of neglecting what may seem to be a trifling skin abrasion is emphasized.

A first aid cabinet is provided in each of the local exchanges and the employes are urged to make use of its contents in case of accident, no matter how small the injury may be. For treating a simple cut, tincture of iodine is provided in a handy little vial. Similar treatment is used on all cuts, bruises, scratches and punctures, after which the wound should be covered with gauze, which may be held in place in any manner convenient.

If in larger, deeper cuts, the blood is bright red and flows in spurts, this is an indication that an artery has been severed. In order to prevent the loss of a large amount of blood and possibly save the life of the injured person, the injured part should be tightly bound above the wound; that is between the wound and the source of blood supply—the heart—which will stop the blood. In illustrating this part of the first aid treatment, the doctor uses as a bandage—which, of course, does not touch the wound—a pair of suspenders, a belt, an ordinary bandage, or even a red flag warning signal.

All burns, except acid burns, require the same treatment. Burns caused by acids should first be washed with water, in order to dilute and remove the acid. The only difference between electric burns and other burns is that electric burns usually cover a smaller area and are deeper.

All burns—acid burns after being washed with water—should be thoroughly covered immediately with any kind of heavy oil, such as automobile oil, linseed oil, carron oil or lard oil. In the first aid cabinet furnished by the company, there is provided a tube of ointment, which is by far the best thing to put on burns. It is never safe to use axle grease in this manner because of the impurities, which are likely to be found in it. Kerosene and gasoline should not be used, because they evaporate too rapidly to be of any value in protecting the injury from the air.

Bruises and sprains should immediately be bathed in cold water—the colder the better. If cold water is not available, very hot water should be used—as hot as it can possibly be borne. Lukewarm water is of no value.

Fractures, that is to say broken bones, should be bound in splints as quickly as possible. Any piece of wood, such as a barrel stave, lather, fence picket, etc., makes a good emergency splint. It is important, however, that the splint be long enough to go well above and below the point where the break is.

In cases where foreign particles have entered the eye, only the simplest methods should be used to remove them. The only safe way for the ordinary person to do is to draw the upper lid down over the lower one and then let it work back. If this does not remove the particle, it will help to start the tears, which may wash it away. A sharp pencil, especially an indelible one, should never be used in attempting to remove particles from the eye. If the method suggested does not relieve, a pad of some soft material held in place by a bandage should be placed over the eye, and a doctor consulted.

All of the simple operations described in the foregoing are demonstrated on a volunteer patient taken from among those in the audience. He is wrapped and bandaged and resuscitated and relieved from all sorts of imaginary pains.

The lecture, which is wholly informal, is given by Dr. B. H. Moore under the supervision of Safety Inspector Fred Rosseland. "We are told," said Mr. Rosseland, "that the Chinese employ their doctors under contract to keep them well. The Christian nations are beginning to see the advantages of this method, and are today using it more and more in connection with the operation of large industrial organizations."

First Aid Outfit Provided for Each Local Exchange of Chicago Telephone Co.

British Operators Commended in Post Office Report.

A special cable dispatch from London, England, states that the bravery of telephone girls during Zeppelin raids and the Irish rebellion, which they helped to quell, featured the annual report of the post office department made public this week.

"When the Zeppelin raids have been anticipated, sometimes when they have been going on," says the report, "the women have come out of their homes to their work—even when bombs were dropping. They have played an important part in the scheme of air-raid warnings and have set a very good example to the whole country."

To Investigate Telephone Company.

The Rotary Club, of Leavensworth, Kan., has decided to investigate the matter of the proposed raise in telephone rates, as asked by the People's Home Telephone Co. of the state utilities commission. A committee of five is to be appointed by the president of the club to make a thorough investigation and report back to the club and the members are then to decide upon the information furnished, whether to take any action in the matter.

Preparedness as Applied to the Telephone Business

True and Accurate Accounting Essential—Companies Urged to Take Advantage of State Utility Laws—Preparedness Toward Ultimate Elimination of Competition—Co-operation with Connecting Companies —Paper Presented at Convention of Illinois Independent Telephone Association

By Ben B. Boynton

One of the first things upon which a telephone company should meet the question of preparedness now being raised in our country, is to see that its house is in order. In setting a house in order one of the first things is to have an accurate knowledge of the house itself and the contents thereof. In the telephone business this accurate knowledge is not obtainable unless true and accurate accounts are kept. It is now the law that true and accurate accounts must be kept. Section 13 of our Illinois public utilities commission law provides:

Such systems of accounts shall provide for forms showing all sources of income, the amounts due and received from each source and the amounts expended and due for each purpose, distinguishing clearly all payments for operating expenses from those for new construction, extensions and additions; and for balance sheets showing assets and liabilities and various forms of proprietary interest.

However, it is not only to obey the law that you must keep your income and expenses in such manner as to show your income, your ordinary expenses, your replacement expenses, and your new construction or added investment expenses, but it is also good business so to do. By such means you are able to tell whether or not your telephone company is a burden or a blessing, whether it is earning or losing money or breaking even.

Another added reason why a telephone company should be prepared with true and accurate accounts of its business is the fact that its revenues and expenses are an essential element of proof, in cases affecting the rates of the company. If you desire an increase in rates you must be able to show what your actual operating expenses are in order to justify the amount of revenue the rates you desire will produce. Similarly if your rates are attacked you must know your actual operating expenses in order to justify the amount of revenue received by you from your present rates.

To such of you as are not incorporated I would advise incorporating your company under the laws of the state of Illinois in order to be prepared. While you are unincorporated you are a public utility and as such public utility you cannot sell your property without the consent of the state public utilities commission. This in many instances might mean considerable delay. However, if you are incorporated, you can sell your stock to individuals without obtaining the consent of the commission and you can obtain the general advantages of a corporation as regarding the limitation of liabilities, etc. There is also an added advantage in that you will be in shape to purchase or acquire other companies, since Section 28 provides that

No franchise, license, permit or right to own, operate, manage or control any public utility, except common carriers engaged in interstate commerce, shall be hereafter granted or transferred to any grantee or transferee other than corporations duly incorporated under the laws of this state.

Thus you will see that by incorporating under the laws of the state of Illinois you will be able, in addition to the ordinary advantages of a corporation, to transfer your stock quickly or to extend and purchase other utilities, acquire franchises, etc.

Section 21 of the Illinois Public Utilities Commission law provides that a public utility may issue stocks and stock certificates, and bonds, notes and other evidences of indebtedness payable at periods of more than 12 months after the date thereof only after obtaining the consent of the state public utilities commission of Illinois, and then only for the following purposes and no others:

For the acquisition of property, or for the construction, extension or improvement of or addition to its facilities, or for the discharge or lawful refunding of its obligations; or for the reimbursement of moneys actually expended from income or from other moneys in the treasury of the public utility not directly or indirectly secured by or obtained from the issue of stocks or stock certificates, or bonds, notes or other evidences of indebtedness of such public utility, within five years next prior to the filing of an application with the commission for the required authorization, for any of the aforesaid purposes except maintenance of service, replacements and substitutions in cases where the applicant shall have kept its accounts and vouchers for such expenditures in such manner as to enable the commission to ascertain the amount of moneys so expended and the purposes for which such expenditures were made, and the sources of the funds in the treasury of the public utility applied to such expenditures.

The above section clearly means that hereafter no long time securities shall be issued by a public utility without a corresponding value being added to the plant of the utility except in cases within the past five years where value has been added to the plant out of earnings or other money not produced by the issuance of securities. Where a telephone corporation has added to the value of plant out of earnings, and its accounts have been so kept as to show this fact, I am of the opinion that it should obtain the consent to the issuance of stock to cover this value in order to make the outstanding securities equal the value of the plant and thus to make it more easy for the individual shareholders to obtain the real value of the stock if such shareholders desire to sell and transfer it.

The doctrine of preparedness is essentially one designed to meet the future. It has nothing to do with the past except in so far as knowledge and experience may be derived therefrom. Therefore in order to be thoroughly prepared we must endeavor to peer into the future and see what there is in store for the telephone business in the future.

Two Economic Theories.

We are now in the transition period between two schools of economic thought regarding the operation of telephone utilities. The first or earlier school, the one under which telephone utilities were operated in Illinois in the past, is the school of doctrine of political economy known as *Laissez Faire* or the doctrine of competition. The proponents of this school believe that the owners of the telephone properties should be allowed to do as they please with their property and that the only restraint that should be imposed upon them is the restraint of competition. Under this philosophy and theory the telephone business in Illinois has been conducted in the past so that at present in many spots in this state there is considerable competition and duplication of investment.

At present there has been placed upon the statute books of the state of Illinois a public utility commission law. This law was framed under the economic theory which has sprung up in the last decade that the telephone utility business is a natural monopoly and one in which the public has an interest and that therefore the owner of the property should be compelled to give adequate service at reasonable rates and should be subject to governmental regulation in order to compel this, and as a reward should be entitled to a monopoly of the business and a fair return upon his investment.

It needs no argument to show that the advocates of this economic theory are right in their position that the telephone business is a natural monopoly and that only one telephone company should be operating in a town, city or village. The value of a telephone to the public depends upon the number of subscribers that might be reached by means of the telephone, and naturally more subscribers may be reached in a town, from a certain telephone with one company in the field than with two companies in the field. The same element of value is attached to what is known as long distance business. The more telephones at a distance that a telephone company is able to reach, the more valuable the telephones of that company are.

The above facts are perfectly apparent and we have to recognize them in order to be prepared for the future. I have heard one of our commissioners say that he would like to see every telephone within the state of Illinois have the power to talk to every other telephone within this state. I feel sure that some time in the future such a condition will practically exist.

In places where there is competition, the result may be obtained by a sale, a purchase, or a merger, if the parties can come to terms. If not, then the result may be obtained by the financial death of one or both of the companies or the result may be obtained by means of a physical connection between the lines of the two companies and the consequent loss of subscribers of one of the connecting companies thus causing its death through lack of patrons. We have no history as regards physical connection and its effect upon the companies, but it is my belief that a physical connection means the elimination of one or the other.

If competition and duplication of investment is to be ultimately done away with, then the competing telephone companies should carefully consider the means by which this result is to be obtained. To attempt to kill a competitor by means of a physical connection strangulation is very uncertain, as no one can possibly tell which company will be strangled. To await the financial death of a competitor is generally unwise since the competitor is liable to struggle along for years leaving the other company watching at the bedside breathing the impure sickening air of low rates and duplication and a possibility of convalescence of the patient.

Then the remedies left are: Purchase, sale or merger. If any one of these remedies is adopted, then the resultant or final company may throw off the burden of low rates and dangerous competition and charge rates adequate to give a reasonable return on the investment. The increase in rates then made will in a majority of cases go far toward wiping out the purchase price. And the competing companies should recognize each others' rights and should attempt to get together in a way that each may save something out of the wreckage. If they do this, then they are acting under the true doctrine of "Preparedness."

But the doing away with competition and duplication of investment is not the only problem before us in preparing for universal service over the state. Those telephone companies that have no competition should work together with their connecting companies on a fair equitable basis. Each telephone company should realize that the day is coming when every telephone company within the state of Illinois will have access to the lines of every other telephone company within this state and should prepare to meet that situation and should co-operate with its neighbors in preparing for that situation.

And if a telephone company within the state of Illinois is an Illinois corporation, having its securities equal to the value of its plant, and having its accounts truly, accurately and properly kept and having all duplication and competition done away with, and having all possible toll connections together with the right kind of friendship, co-operation and square dealing of connecting companies, and having adequate rates and giving good service—then that telephone company is truly prepared and has reached the goal towards which all telephone companies should now be striving.

From Factory and Salesroom

Conventions: Indiana Independent Telephone Association, Indianapolis, September 14-15; United States Independent Telephone Association, Chicago, December 5-8

New Member of American Electric Engineering Department.

The many friends of W. W. Kideney, for so many years with the Century Telephone Construction Co., of Buffalo, will be pleased to learn of his recent affiliation with the engineering department of the American Electric Co., of Chicago.

Mr. Kideney's early business activity in the lumber business of the Monongahela Valley of Pennsylvania was dropped in 1895 to enter the Independent field as representative for the Keystone Telephone Mfg. Co., of Pittsburgh. In 1900, after the absorbing of this company by the American Electric Telephone Co., and a couple of years of activity with the Hipwell Mfg. Co., of Allegheny, Mr. Kideney organized the manufacturing department of the Century Telephone Construction Co. at Cleveland, Ohio, of which B. G. Hubbell, of Buffalo, was president.

W. W. Kideney.

Mr. Kideney continued in the services of this company, which moved to Buffalo in 1902, where he continued as general manager of that company up to his affiliation with the American Electric Co. Mr. Kideney devoted his time to common battery work and was particularly successful, at the present time many practices being the result of his work.

His many friends in the Independent field extend to him their best wishes in his new work.

New Products of Frank B. Cook Co.

The Frank B. Cook Co., of Chicago, is announcing several new devices in the telephone protective field. One of these is a new multiple lightning arrester, which is claimed to possess several original points of merit.

Three new central office or switchboard protectors have also been added to the Cook line.

The Cook company is also placing on the market two new copper lightning arrester blocks which are said to be extremely unique and practical.

Needless to state, all of these new Cook devices have been put on the market only after years of experimenting on the part of the Frank B. Cook Co. It is expected they will meet with a very cordial reception on the part of Independent telephone men.

White Truck for Public Utility Company.

Following a competitive test between a threee-ton White truck and a three-ton truck of another make, the Cleveland Electric Illuminating Co., of Cleveland, Ohio, has placed an order for another fleet of ten Whites, making a total of 16 White trucks now operated by this company.

The two trucks went over the same route, covering 24 miles on the same day. An accurate record was kept covering the

speed for each mile, fuel consumption, water temperature and general operating conditions. The Whites, with standard equipment, not only gave a greater mileage per gallon of gasoline used, but ran at a greater speed over each mile of the route and came back with a perfect score. The other truck equipped with special devices designed to increase its running efficiency, made half the trip with a steaming radiator, and despite the slower time consumed 28 per cent. more gasoline.

The telephone truck which the White Co., Cleveland, Ohio, has designed especially for telephone work, also is said to have great efficiency. It is meeting with favor among telephone companies. The company will be glad to furnish full information regarding its trucks to those interested.

The Stromberg-Carlson Magneto Switchboard.

The Morning Sun Telephone Co., of Morning Sun, Ohio, a flourishing little company in the Buckeye state is making many

The Type A 11,564 Stromberg-Carlson Magneto Switchboard.

improvements to its system. In keeping with its policy to give patrons the best of service, it has placed an order with the Stromberg-Carlson Telephone Mfg. Co. for new central office equipment. The order calls for one section of type A-11,664 board, shown in accompanying illustration.

This switchboard is said to be a great favorite among the smaller magneto operating companies. The general construction is the same as boards of larger capacity. The No. A-11,664 is the low type of cabinet, the keyboard being only 30 3/16 inches above the floor. The operator may therefore sit in an ordinary chair and take care of its operation. The sides of cabinet are built flush, so that additional sections may be added from time to time as required, giving the appearance of one continuous cabinet.

The Stromberg-Carlson company reports an active demand for its magneto switchboards. The type mentioned is illustrated and fully described in the Stromberg-Carlson bulletin No. 1012, a copy of which will be mailed to interested parties on receipt of request.

Dry Battery Endurance.

Dry batteries, such as are used in telephone service, sometimes have extraordinary length of life. One of these instances to which attention has been directed is that of a set of Nungesser "1900" dry cells which were installed by the Citizens Telephone Co., of Laconia, N. H., on March 20, 1908. The dry cells were received by the telephone company more than a month before their installation, and they were in continuous service until May 1, 1916—over eight years.

The telephone to which these batteries were attached was in use continuously in the residence of the manager of the street railways of Laconia.

This is not, of course, an ordinary case. The company manufacturing the "1900" battery, which is so widely used in telephone service, does not claim that all its batteries will generate current for eight years. It is a fact, however, that the use of specially selected and specially refined ingredients will add greatly to the length of a battery's usefulness. In this respect the Nungesser "1900" battery is said to be quite out of the ordinary. Its lasting qualities and the evenness of the current generated by it are undoubtedly traceable to the skill which goes into the selection, refining and compounding of the ingredients.

The manager of a telephone system in Wisconsin says he has noted two cases in which "1900" dry batteries have given good service for seven years, and that others, which have been in use for from four to five years, have come under his observation frequently.

"Three years," he says, "is the most common."

Advertising That Pays.

The Stromberg-Carlson Telephone Mfg. Co., of Rochester, N. Y., has published a little booklet under the title, "Advertising That Pays," which has to do with moving picture advertising for telephone operating companies. Six styles of slides are shown and particulars given. Those who are interested should write for a copy. It will be promptly mailed and can hardly help but interest those receiving it.

Bell Company to Erect New Building in Pottstown, Pa.

Plans have been completed by the Bell Telephone Co. of Pennsylvania for a new telephone building in Pottstown, Pa., to cost approximately $40,000. The building will be three stories in height and will be located on the corner of Penn and King streets. New equipment involving an expenditure of $40,000 will be installed upon the completion of the building. A further expenditure of $25,000 will be used for outside plant improvements.

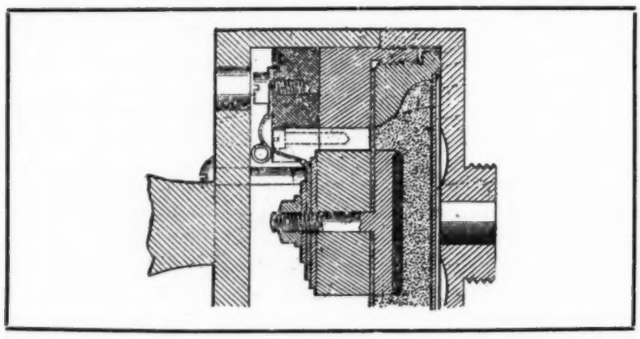
Paragraphs.

The Roller-Smith Co., 233 Broadway, New York, has just issued its Bulletin No. 300 on portable direct reading slide wire ohmmeters. Copies of this bulletin will be promptly sent on request.

The Quick Action Ignition Co., a corporation formed under the laws of the state of Indiana, with an authorized capital stock of $450,000 has taken over the business and assets and has assumed the liabilities of the Knoblock-Heideman Mfg. Co., of South Bend, Ind. The new company starts with ample cash capital and with facilities for largely augmenting the business of manufacturing the Quick Action Ignition apparatus which has been brought to a high degree of success by the old company. The latter company, finding its capital insufficient to cope with the business offered, has expanded as just indicated.

Record of Telephone Patents Recently Issued

1,186,563. June 13, 1916. AUTOMATIC COMMON BATTERY TELEPHONE EXCHANGE; E. D. Fales, Chicago; assigned to First Trust & Savings Bank, Chicago. The feature of this automatic system is the provision of inductive connections in the talking circuit and bridges placed in front and back, respectively, of these connections. A pair of relays is placed in each bridge and talking current supplied through their windings. The switching mechanism is controlled by at least one of the relays as is also the release mechanism. Subscriber-operated means control the energization of at least one of the relays. The relay windings constitute the sole or only artificial resistance between the battery and the talking circuit. There are 46 claims to this patent.



No. 1,186,746.

1,186,577. June 13, 1916. ATTACHMENT FOR COIN COLLECTING APPARATUS; A. U. Hoefer, East Orange, N. J., and L. D. Barrows, New York; assigned to American Telephone & Telegraph Co. A coin chute-closing attachment consisting of a strip of sheet metal bent to furnish two arms is described. One of the arms is adapted to constitute a chute closure and the other serves to attach the member on the chute.

1,186,746. June 13, 1916. TELEPHONE TRANSMITTER; C. L. Chisholm, London, Ontario, Canada. The diaphragm of this transmitter forms the front wall of a granule chamber while another diaphragm with a back contact mounted thereon, constitutes the rear wall. The back diaphragm forms a yielding support for the back contact, while a weight attached to the back diaphragm exterior to the granule chamber, is movable with the diaphragm. The granule chamber has marginal walls extending from the sound-receiving diaphragm to the back diaphragm and decreasing in diameter in that direction.

1,186,817. June 13, 1916. SEMI-AUTOMATIC TELEPHONE SYSTEM; E. A. Mellinger, Chicago; assigned to Automatic Electric Co. In this semi-automatic system a calling device is associated with the operator's set connected with the cord circuit, and normally disconnected from trunk lines which terminate in jacks with which the cord circuit is adapted to be connected. Upon the forward rotation of the rotary dial of the calling device, connection is automatically made with an idle trunk. The backward rotation of the dial operates mechanism for transmitting a series of impulses over the selected trunks. When the operator connects the cord circuit with the jack of the selected trunk, the calling device is disconnected from the trunks.

1,186,823. June 13, 1916. MEASURED SERVICE TELEPHONE SYSTEM; F. Newforth, Jr., Liverpool, England; assigned to Automatic Electric Co. In this automatic system a meter for registering calls is controlled over a release circuit in the automatic switches which establish connections between any two subscribers' lines. The meter is actuated by an operating magnet, current for which is transmitted from a battery during the establishment of the connection. Provision is made for inserting another battery in the release circuit for transmitting a strengthened impulse through the magnet to operate it upon the response of the called subscriber.

1,186,864. June 13, 1916. AUTOMATIC CUT-IN FOR TELEPHONE REINFORCING DEVICES; E. E. Crafton, Portland, Me. A reinforcing apparatus is placed in shunt with the receiver of a telephone set. A battery in series with an auxiliary receiver has a normally-open circuit, that includes the reinforcing apparatus. When the main receiver of the set is removed from the switchhook, both the telephone set circuit and the normally-open circuit of the auxiliary receiver are closed.

1,186,908. June 13, 1916. AUTOMATIC SELECTOR SWITCH; C. A. W. Hultman, Stockholm, Sweden. Construction details of a selector switch are given. A rotatably and longitudinally movable shaft carries a system of arms. Two concentric rows of fixed terminals are provided for each arm system. The terminals of the inner row are adapted to be operated by the corresponding arm system. The terminals in the outer row are adapted to be engaged by the corresponding terminals of the inner row and latter are acted upon by the arm, the arms being electrically independent of the circuits of the terminal.

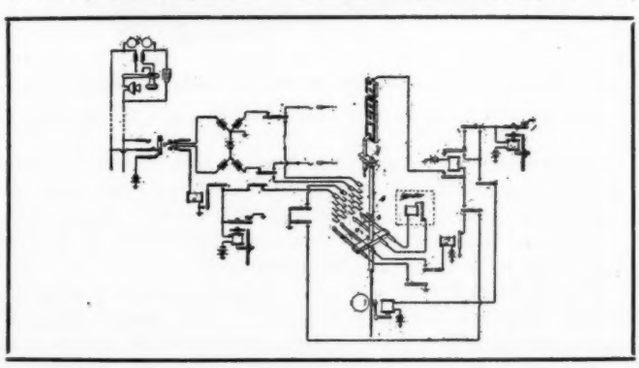
1,186,929. June 13, 1916. COIN-OPERATED TELEPHONE ATTACHMENT; E. E. Murray, Shawville, Pa. The feature of this coin-operated telephone attachment is a coin-connected plunger which has upper and lower sections. A rocking element, fulcrumed upon the casing, has a pivotal and adjustable connection at one end with the lower plunger section. There is also a connection between the rocking element and the end of a door-latching lever for releasing the lever upon movement in one direction of the plunger. A spring connects the rocking element and the casing for returning the latch and plunger to their initial positions.

1,186,959. June 13, 1916. CIRCUIT-BREAKER RELAY; A. H. Weiss, Chicago; assigned to Kellogg Switchboard & Supply Co. This circuit-breaker relay, which is operated as a buzzer on an abnormal current flow, comprises a spool electromagnet with a pole piece secured to one end of the core and extending adjacent to its peripheral surface. An armature is pivotally supported by a free end of the pole piece in operative relation to the free end of the core of the electromagnet. A contact spring is secured to the pole piece and adapted to be actuated by the armature.

1,187,095. June 13, 1916. TELEPHONE SYSTEM; F. N. Reeves, Newark; N. J.; assigned to Western Electric Co. The feature of this semi-automatic system is the provision of two relays, one of which is a test relay. A circuit for a switch-controlling electromagnet extends through the front contacts of the second relay while the relay circuit itself extends through the contacts of the test relay. The test relay is operated to open the circuit of the second relay upon the switch engaging the contacts of the required line. Provision is made for maintaining the second relay energized until the switch brushes are centrally positioned on the contacts.

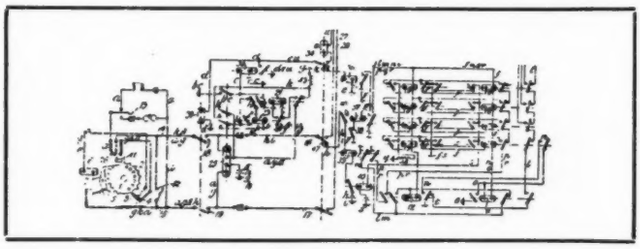
1,187,126. June 13, 1916. LIGHTNING ARRESTER; A. E. Beattie, St. Michaels, Torquay, England. In this device for protecting telephone, telegraph, and like instruments against lightning and excessive electric potentials, a separate terminal is connected to each line wire of the instrument and a magnet having a separate winding is connected between the instrument and each of the line wires. An earthed connection is carried by the armature of the magnet which is adapted to contact with the line terminals on attraction by the magnet. A system of spring-mounted levers is adapted to be operated by the movement of the armature to break the contact of one of the levers, which is normally in contact with a line wire, so that the instrument to be protected is disconnected from the circuit.

1,187,634. June 20, 1916. AUTOMATIC EXCHANGE; J. H. Lorimer, deceased, and G. W. Lorimer, Brantford, Ontario, Canada; assigned to Western Electric Co. In this automatic system the main lines, or substation circuits, are divided into groups and each group provided with two or more selecting switches adapted to select and establish connections with any one of the main lines of the group as a called line. Any calling line of each group of lines may be placed in connection with the main line circuit selecting switch for the same or for any other group of lines. There are 425 claims to this patent.



No. 1,187,095.

1,187,671. June 20, 1916. AUTOMATIC TELEPHONE SYSTEM; A. E. Stevens, Quincy, Mass.; assigned to S. H. Couch Co., Atlantic, Mass. This system is primarily designed for intercommunicating purposes. A trunk line from the outside system terminates at a monitor station and incoming calls over it are controlled by the monitor. Any of the substations may establish communicable relations with the trunk line without control of the monitor. Should, however, any station endeavor



No. 1,187,806.

to connect with the trunk line while it is in use, its own individual lockout means will automatically operate.

1,187,806. June 20, 1916. AUTOMATIC OR SEMI-AUTOMATIC TELEPHONE SYSTEM; G. A. Betulander, Sodertorns Villastad, Sweden, and N. G. Palmgren, London, England, and O. Grahn, Stockholm, Sweden; assigned to Relay Automatic Telephone Co., Ltd., London, England. In this system impulse relays are adapted to be operated by interruptions of the line current and thus to control the setting of the selectors. An impulse-sending device is located at the exchange and is adapted to control a number switch which, in turn, is adapted to control the selector. An electromagnet, which controls the number switch, is prevented from operating a second time until the number switch has moved one step.

1,187,928. June 20, 1916. TEST CIRCUITS; F. N. Reeves, Newark, N. J.; assigned to Western Electric Co. In this test circuit for automatic systems, a circuit for the motor magnet of a switch extends through the front contact of a test relay which has a pair of energizing windings. One of the holding circuits of these windings extends through a test brush of the switch and the other through an interrupter actuated in the movement of the switch.

1,187,947. June 20, 1916. CALL DISTRIBUTING SYSTEM FOR TELEPHONE EXCHANGES; A. H. Weiss, Wilmette, Ill.; assigned to Kellogg Switchboard & Supply Co., Chicago. An automatic traveling switch has stationary contacts connected in regular order to a plurality of cord circuits distributed among operators' positions at a switchboard. Manually controlled means are provided for varying the starting point of the switch whereby others of the cord circuits will be the first ones tested, when the switch is started, instead of a certain one.

1,188,002. June 20, 1916. TELEPHONE SYSTEM; H. J. Meredith, Holyoke, Mass. A step-down transformer has its primary winding connected in circuit to a source of low-frequency alternating current. The secondary winding of the transformer supplies voltage of the proper value for the transmitter circuit. The primary winding of a step-up transformer is connected in series with the transmitter circuit and the secondary winding of the step-down transformer. The secondary winding of the step-up transformer is adapted to step-up the voltage in a circuit which includes the receiver.

1,188,053. June 20, 1916. TELEPHONE APPARATUS; H. C. Egerton, Passaic, N. J.; assigned to Western Electric Co. In this telephone transmitter a resistance-varying medium is in contact with the diaphragm. A supporting member carries the container for the resistance-varying medium and is responsive to the heat generated therein. The supporting member is dished to bow away from the diaphragm when heated.

1,188,666. June 27, 1916. COIN GAUGE FOR TELEPHONE PAY STATIONS; G. A. Long, Hartford, Conn.; assigned to Gray Telephone Pay Station Co., Hartford, Conn. This coin gauge consists of a back and a front section rigidly united to each other. The back section is provided on its inner lower side with a projecting portion, while a second projecting portion is placed between the other projecting portion and the other end of the rear portion to thus present on the inner face of the back section a plurality of runways. The front section has coin-receiving holes coincident with the several runways.

1,188,691. June 27, 1916. MOUTHPIECE; E. D. Spear, Boston, Mass. An auxiliary mouthpiece designed to prevent other persons from hearing a telephone conversation, is described. It consists of a receptacle having a conchoidal chamber, one of the ends of which is connected to the regular transmitter mouthpiece and the other end adapted to be used as a mouthpiece.

1,188,804. June 27, 1916. COMMON BATTERY TELEPHONE EXCHANGE SYSTEM; T. G. Martin, Chicago; assigned to First Trust & Savings Bank, Chicago. In this common battery automatic system, the connector is provided with a differential relay and a private wiper; together with private bank contacts adapted to be energized by the private wipers. A second relay is energized over a local circuit during talking and one relay controls the other. Provision is made whereby the private wiper prevents connection of the contact of the energized relay with a busy line. There are 94 claims to this patent.

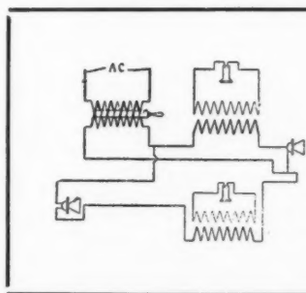
1,188,929. June 27, 1916. AUTOMATIC TELEPHONE EXCHANGE SYSTEM; C. L. Goodrum, New York; assigned to Western Electric Co. This patent relates to trunking between the main exchange and sub-exchange. Automatic switching mechanism is provided for simultaneously connecting a calling line to an inter-office trunk finder and a local trunk finder. Automatically operating means, operative during the progress of a call, release the local trunk finder when the wanted subscriber is not within the sub-exchange district and release the inter-office trunk finder when the wanted subscriber is within the sub-exchange.

1,189,001. June 27, 1916. EXTENSION TELEPHONE; D. G. Saunders, Jr., Kansas City, Mo. A portable instrument box has swinging support on the wall board and contact points urged to engagement with contact points on the wall board by the weight of the box on its swinging support. The telephone set may therefore be carried from one room to another and used from any room.

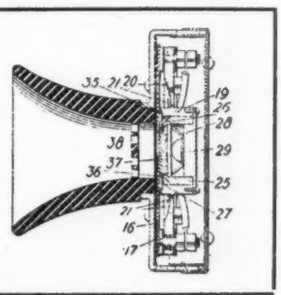
1,189,059. June 27, 1916. CROSS ARM BRACE; G. W. Chaffin, Dayton, Ohio; assigned to J. R. Fletcher, Dayton, Ohio. This brace comprises a one-piece, U-shaped holder, the legs of which are adapted to straddle a cross arm, both being straight throughout their whole length for close contact with the arm and one extending beyond the arm. The longer leg has a malleable end to be clinched around one edge of the arm to retain the holder thereon. A second holder is substantially identical with the first. A brace arm is formed integrally with each holder and extends laterally therefrom, having in it a longitudinal slot and also a series of transverse teeth. The brace arms of the two holders overlap with their teeth in engagement and their slots in register, while a clamping bolt passes through the slots.

1,189,088. June 27, 1916. BRACKET FOR ELECTRICAL WIRE CONSTRUCTIONS; G. S. Gardner, Columbus, Ohio; assigned to J. R. Fletcher, Dayton, Ohio. This bracket is an upright one-piece stem, the lower end of which is directed laterally to carry an insulator, the upper end being adapted to be passed through and extended above a bore in the cross arm. Insulators may therefore be placed on the bracket both above and below the cross arms.

1,189,272. July 4, 1916. LIGHTNING ARRESTER; W. McK. McClintock, St. Paul, Minn. In this lightning arrester a conducting plate is seated on an insulating block through which a binding screw adapted for a ground connection, passes. This screw is insulated from the conducting plate and carries a second conducting plate which overhangs the first-mentioned plate and is insulated therefrom. A block of high resistance material is interposed between the conducting plates and in close contact therewith. This block has sufficient resistance to prevent the passage of a normal current through it but offers a decreased resistance to the passage of a current of



No. 1,188,002.



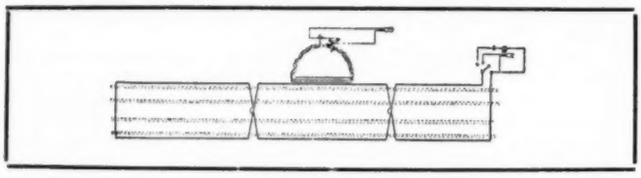
No. 1,188,053.

high voltage and temporarily forms a conductor for it to the binding screw and thus to the ground.

1,189,317. July 4, 1916. INDUCTIVE TELEPHONE INSTALLATION; H. von Kramer, Erdington, Birmingham, England. A system for telephoning from moving railroad trains is described. A stationary circuit comprising a pair of conductors in series relationship is mutually crossed at intervals, each having alternate parts laid near and parallel to the track rails. A movable circuit is carried by each car and comprises a

plurality of long straight parallel wires in series relationship and disposed longitudinally beneath the car in close proximity to the alternate parts of the stationary circuit. A telephone transmitter, receiver, and a source of current are included in each of the circuits.

1,189,364. July 4, 1916. AUTOMATIC TELEPHONE SWITCH; A. E. Keith, Hinsdale, Ill.; assigned to Automatic Electric Co.,



No. 1,189,317.

Chicago. An automatic switch having vertical and rotary motion is individual to a trunk. Wipers are associated with the switch for grounding one or more of a plurality of contacts of the switch. Means controlled by the wipers initiate and control the extent of operation of the switch. There are 30 claims to this patent.

1,189,411. July 4, 1916. TELEPHONE TRANSMISSION SYSTEM WHEREIN REINFORCING REPEATERS ARE EMPLOYED; A. S. J. van Kesteren, Vlissingen, Netherlands. In this system a pair of parallel lines are connected at the ends to each other and also to the lines going to each subscriber's station. Repeaters are placed in the lines and so arranged that one line is used only for transmission in one direction and so that the total damping in a closed circuit composed of the parallel lines, is greater than the total reinforcing of the repeaters.

1,189,458. July 4, 1916. TELEPHONE EXCHANGE SYSTEM; A. E. Lundell, New York; assigned to Western Electric Co. In this automatic system a slow-acting relay is employed at the connector to control a steering switch to effect the change-over operation at the end of each series of line circuit interruptions caused by the operation of the subscriber's dial. The steering switch is adapted, when operated upon the termination of the last series of circuit interruptions, to include the slow relay in circuit with the called line, the relay being adapted to respond when the called party answers. A release circuit for the connector which controls the steering switch, is controlled at a back contact of the relay.

1,189,490. July 4, 1916. TELEPHONE ATTACHMENT; E. Sanders, New York; assigned one-third to I. Scherer, New York. This attachment comprises a closed diaphragm cap from which a plurality of ear connections are taken. One of these ear connections is flexible and the other is formed of rigid telescopic members. Provision is made for establishing the receiving circuit while the receiver is kept in position upon the hook.

1,189,525. July 4, 1916. TELEPHONE SYSTEM; G. Babcock, Chicago; assigned to Telechronometer Co., Rochester, N. Y. A telephone system which employes a rate for service based upon the number of messages and the duration of conversations originating at the substations, is described. A time meter and a message meter are installed at the subscriber's station. The time meter registers the length of time the subscriber's talking apparatus is in use for outgoing messages only, while the message meter records the number of outgoing connections established. Provision is made so that the subscriber may disable the outgoing message meter and prevent outgoing transmission, but at the same time permit incoming transmission and the operation of the time meter. There are 44 claims to this patent.

1,189,596. July 4, 1916. TELEPHONE AND TELEGRAPH POLE; W. McFadden, Davis, W. Va. A tripod-like arrangement of uprights with upper-end right-lined flat portions bolted together for the attachment of cross arms, is described in this patent. The uprights are hollow or tubular with the upper portions pressed together so as to produce the flat parts. The flat portions, when bolted together, are T-shaped in horizontal sections, leaving one side thereof flat for the purpose of providing a smooth surface for attaching the cross arm.

1,189,728. July 4, 1916. TELEPHONE REPEATER; A. H. Olsson and H. B. M. Pleijelk, Stockholm, Sweden. This repeater comprises two induction coils, the primary and secondary windings of which are respectively connected in series. The calling current source is bridged by a capacity. One of the coils is adapted for working with speech currents and the other with calling currents.

1,189,836. July 4, 1916. TELEPHONE SYSTEM; E. Land, Detroit, Mich.; assigned to Kellogg Switchboard & Supply Co., Chicago. In this semi-automatic system a line relay is connected with each subscriber's line at the exchange. A series of trunk lines, each terminating in a connection device, are selectable by a switch mechanism which is operable by a relay-controlled motor that is accessible to each subscriber's line. A manually-controlled permutation switch mechanism is accessible to one or more operators whose cord circuits each include means for connection with a corresponding trunk line. An automatic switch connects the permutating switch mechanism with a group of subscribers' lines. There are 81 claims to this patent.

1,189,862. July 4, 1916. RINGING CURRENT INTERRUPTER; H. F. Obergfell, Chicago; assigned to Automatic Electric Co. This interrupter for use in automatic systems comprises a magnet and means for energizing it when connection is made with a subscriber's line. Provision is made for automatically breaking the energizing circuit while means controlled by the return of the plunger of the magnet to normal position, successively interrupt the supply of ringing current to the different groups of subscriber's lines. There are 45 claims to this patent.

1,189,891. July 4, 1916. ELECTRICAL RELAY; H. G. Webster, Chicago; assigned to J. R. Garfield, trustee, Cleveland, Ohio. A multiple-contact relay for the automanual system is covered by this patent. The relay structure consists of a magnet core and winding and an apertured, bell-crank armature; a return frame having a knife-edge bearing upon which the armature is fulcrumed and a projection entering the armature aperture; a retaining plate entering the aperture and supported upon the projection; and contact springs actuated by the armature.

1,190,086. July 4, 1916. TELEPHONE CIRCUIT; A. E. Beachum, Bolkton, N. C., assigned one-half to R. L. Steele, Rockingham, N. C. The induction coil used in this circuit has a core relatively long in proportion to its cross section. A primary winding is placed next to the core and over it is a secondary winding having a large number of turns. A second primary winding is placed over the secondary winding and has the same number of turns. A transmitter, a source of energy, and one of the primary windings are in one circuit while a receiving device and the secondary widing are in another circuit. A third circuit includes the primary winding and a balancing resistance bridged across the first primary winding.

1,190,185. July 4, 1916. AUTOMATIC TELEPHONE SYSTEM; T. G. Martin, Chicago; assigned to Automatic Electric Co. The feature of this automatic common battery system is a line relay normally in series with the common battery which supplies talking current. A battery and relay are bridged across the talking circuit. Provision is made for connecting an impedance in series with the line relay when the talking circuit is established.

1,190,548. July 11, 1916. TELEPHONE RECEIVER; W. W. Henry, Wollaston, Mass.; assigned to S. H. Couch Co., Atlantic, Mass. A receiver support for apartment house flush-mounted telephone sets is described. The support comprises a curved conduit pivotally mounted behind the wall plate of the instrument and adapted to project through an opening in the plate. The receiver is pendantly mounted in connection with the projecting end of the conduit. The raising or lowering of the receiver causes the rigid conduit to withdraw or extend through the wall plate. Provision is made so that the conduit may automatically control an electric switch.

1,190,813. July 11, 1916. TELEPHONE TRANSMITTER; N. Tannaka, New York. The diaphragm of this transmitter is sufficiently stiff to vibrate substantially bodily under the stresses of the intended operation. A plurality of variable resistance means is in co-operative relation with the diaphragm and portions serve as intermediate electrodes therefor. An elastic washer is held between the diaphragm and the plate and provision is made for yieldingly holding them under pressure without hard contact between the diaphragm and the casing

1,191,167. July 18, 1916. RELAY; J. Erickson, Chicago; assigned to Automatic Electric Co. A yoke secured to one end of the electromagnet of this relay, has a post secured to it and extending substantially parallel to the magnet. A plate having an end portion through which the posts extend, is adjustably mounted on the yoke. An armature is mounted upon the plate and means provided for adjusting the plate along the post to adjust the strokes of the armature.

1,191,210. July 18, 1916. TELEPHONE INTERCOMMUNICATING AND SUPERVISORY SYSTEM; T. G. Martin, Chicago; assigned to Automatic Electric Co. In this system, means controlled from the substation are provided for extending a call from a telephone line in the direction of a called subscriber. Through means at the substation of the telephone line, the station may be connected directly with any one of a plurality of lines. The telephone is connected to each one of the other lines and provision made at the exchange or central station for seizing any one of the plurality of lines in response to a call from some other subscriber.

Paradoxical, Prosperous America

By R. GOODWYN RHETT
President, United States Chamber of Commerce

¶ Almost every factory in the land is operating, and operating at a profit—some of them at such profits that their owners are unwilling to talk about them. The demand for coal is fifty per cent in excess of normal at this time of the year and the sale of electricity for light and power has increased $28,800,000 and is 18% in excess of last year. Capital issues have increased over $400,000,000 in the first four months of this year. In the past your *National* bank deposits have increased over two and a half *billions* of dollars which indicates that the increase in total deposits will probably run over $5,000,000,000. Bank clearings show an increase of 68% over May, 1914, before the war broke out. Our railroads show receipts for ten months ending with April of over $1,500,000,000 in excess of the previous year and an excess in net earnings of a half billion dollars.

¶ Our express companies have changed a deficit into a net profit of over $6,000,000. Building permits show an increase of over 32% in excess of last year and so it goes in almost every line.

¶ In brief the Income of Prosperous America is now estimated to have increased from thirty billions in 1915 to forty billions in 1916, and to be far and away in excess of anything ever before reached by any country in the world.

¶ And yet one still finds apprehension that this prosperity may be unreal or transient; that somehow or other it is abnormal, it is predatory and some of it at least is going to fade away. Why should such apprehension exist?

(Reprinted By Courtesy from July issue of Advertising and Selling)

Please tell the Advertiser you saw his Advertisement in TELEPHONY.

1,191,265. July 18, 1916. TELEPHONE EXCHANGE SYSTEM; J. L. Wright, Cleveland, Ohio; assigned to Western Electric Co. In this automatic system, automatic switching mechanism is provided for selecting the called line. Means associated with the switching mechanism and responsive to audible signals over the calling line, transmit impulses to a stepping magnet to cause the automatic switching mechanism to select the called line.

1,191,507. July 18, 1916. ATTACHMENT FOR TELEPHONE MOUTHPIECES; J. A. Hall, San Diego, Cal. A cylindrical, tubular member provided with perforations is attached to the regular telephone mouthpiece. A pad is placed in a channel formed between flanges of the tubular members.

1,191,690. July 18, 1916. VACUUM LIGHTNING ARRESTER; J. T. Greene, Toledo Ohio; assigned to National Electric Specialty Co., Toledo. This lightning arrester comprises an evacuated glass vessel formed with an inturned stem, the leading-in wires being sealed through the stem. A body of plastic nonconducting material unites the base to the stem and incloses the upper ends of the leading-in wires.

1,191,917. July 18, 1916. TELEPHONE TRUNKING AND SUPERVISORY SYSTEM; W. L. Campbell, Chicago; assigned to First Trust & Savings Bank. The feature of this automatic system is a special service line. Automatic means trunk a calling subscriber into connection with a connector adapted to make connection with the special line. Arrangements are provided by which the subscriber controls the connector to establish connection with the special service line.

Condensed News Reports

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items of Interest as to Their Plants and Systems

New Companies and Incorporations.

EATON, ILL.—The Porterville Telephone Co. was recently incorporated with a capital stock of $2,350. The incorporators are E. G. Kendall, E. A. Lingafelter and O. H. Smith.

PEARL CITY, ILL.—The Pearl City Mutual Telephone Co. has filed articles of incorporation. The capital stock is $5,000. The incorporators are: E. Tollmeier, L. H. Kuhlmyer and L. C. Housel and J. G. Worker.

CLARKFIELD, IA.—The Clarkfield Telephone Co. has been organized. H. P. Andrisen is president; John A. Olson, vice-president, and George J. Pierson, treasurer.

BOWLING GREEN, KY.—The Rockland Telephone Co. has been granted articles of incorporation. The capital stock is $1,000. The incorporators are: T. R. Hines, J. S. Justice and A. J. Stahl.

GLASGOW, KY.—The Glasgow Telephone Co. was recently incorporated with a capital stock of $100,000. The incorporators are Dr. R. H. Porter and W. L. Porter.

PILLAGER, MICH.—The Crow Wing Valley Farmers Telephone Co. has been incorporated. A line will be built to Motley.

WINONA, MICH.—The Suburban Telephone Co. is being incorporated with a capital of $5,000. A. O. Stubstad, Stanley Hammer and J. H. Johnson are the incorporators.

ASTON, MONT.—The Lake Basin Farmers Independent Telephone Co. was incorporated recently with a capital stock of $40,000.

LAUREL, YELLOWSTONE CO., MONT.—Articles of incorporation have been filed for the Farmers Mutual Telephone Co. of Laurel. The incorporators are A. G. Rich, John M. Moots and T. R. Holmes. The capital stock is $40,000.

ROUNDUP, MONT.—The Cameron Creek Telephone Co. has been incorporated by J. J. Carson, John Wogler and Andrew Johnson. The capital stock is $8,000.

MANDEN, N. D.—The St. Anthony Telephone Co. has been incorporated with these officers: E. R. Helbling, president; Lorenz Geiss, vice-president; F. M. Klein, secretary and Adam Leingang, treasurer.

WITTEN, S. D.—The Witten Telephone Co. was incorporated recently with a capital stock of $25,000. W. R. Leslie, Geo. Brewer and Dan Smith are the incorporators.

PARIS, TENN.—The Consolidated Telephone Co. of Henry county has made application for a charter, with a capital stock of $10,000.

CHINA SPRINGS, TEX.—The China Springs Telephone Co. has been incorporated with a capital stock of $2,232.

Financial.

DES MOINES, IOWA.—The Iowa Telephone Co. has increased its capital stock from $10,000,000 to $15,000,000.

WHITE ROCK, S. D.—At the annual meeting of the White Rock Telephone Co. a 7 per cent. dividend was declared—the first dividend it has paid. M. A. Leversee was elected president for the ensuing year and M. W. Sanders, secretary.

OZONA, TEX.—The Ozona Telephone Co. has increased its capital stock from $15,000 to $25,000.

Franchises.

DIXON, KY.—The Independent Telephone Co., of Parovidence, Haywood Williams manager, and the Cumberland Telephone & Telegraph Co. here, have purchased at $100 each franchises for operating telephone systems in this (Webster) county.

FROID, MONT.—The Froid Telephone Exchange, of which A. O. Hedberg is owner, was recently granted a franchise for 25 years.

BRYAN, TEX.—The Bryan Telephone Co. has been granted a franchise to operate in this city for the next 20 years.

GREEN RIVER, UTAH.—L. H. Green has been granted a fifty year franchise to operate a telephone system in this city.

Elections.

HINCKLEY, MINN.—The following are officers of the Farmers Co-operative Telephone Co.: James Haney, president; C. J. Charleston, secretary, and Warren Derr, treasurer.

ISLE, MICH.—The following are the newly elected officers of the Eastside Telephone Co.: Anton Swedberg, president; Andrew Larson, vice-president, and Victor Peterson, secretary and treasurer.

PARK RAPIDS, MICH.—At a meeting of the directors of the Park Rapids & Itasca State Park Telephone Co. the following officers were elected: F. M. Shephard, president; Theodore Wegman, vice-president; and W. M. Taver, secretary and treasurer.

MALTA, MONT.—The Malta-Zortman Telephone Co. has received permission from the county commissioners to construct and operate a line along the public highway to Zortman.

MILBANK, S. D.—At a meeting of the directors of the Grant County Telephone Co. the following officers were elected: G. W. Robinson, president; Julius Fenner, vice-president, and C. B. Randall, secretary.

MOTT, N. D.—The Odessa Township Telephone Co. has been organized and the following officers have been elected: Oliver Johnson, president; John Senn, vice-president, and L. Lantz, secretary.

Miscellaneous.

EARLVILLE, IA.—The Interstate Telephone Co. is installing a new exchange.

OTTUMWA, IA.—The Iowa Telephone Co. is improving its system here with new cables.

ELKADER, IA.—The Standard Telephone Co. will rebuild its system the coming fall.

BILLINGS, MONT.—The Mountain States Telephone & Telegraph Co. is placing its wires underground.

CULBERTSON, MONT.—The Farmers Telephone Co. will extend its lines.

MADOC, MONT.—The Outlook Co-operative Telephone Co. has commenced the building of its line.

ASHVILLE, N. C.—The Ashville Telephone & Telegraph Co. has given notice of increase in capital stock from $300,000 to $500,000.

MINCO, OKLA.—The Minco Telephone Co. has been sold to S. J. Bennett, of Waxahachie.

CHANCELLOR, S. D.—Frank Pool has purchased the stock of the Chancellor Telephone Co. from F. J. Meier.

AUSTIN, TEX.—The Benavides Telephone Co., of Benavides, has filed a certificate of dissolution with the secretary of state.

OZONA, TEX.—The Ozona Telephone Co. has increased its capital stock for $15,000 to $25,000.

ORANGE GROVE, TEX.—R. C. Barfield has sold the local telephone exchange to E. G. Schumacher.